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SOME CAUSES OF CARDIAC ARREST *

JOHN ADRIANI, M. D. †
NEW ORLEANS

There are almost as many meanings to the term cardiac arrest as there are users of the term. The term is not easily defined. It should be used to designate unexplained, unexpected failure of cardiac action when all physiologic systems appear to be functioning normally. The impression has been created that a new perplexing clinical entity has been discovered. Actually the same difficulties previously experienced are now being designated by another name. A decade ago physicians were timid and limited resuscitation of the heart to the intracardiac injection of epinephrine. Today, when cardiac arrest is suspected the chest is promptly opened and attempts are made to restore the beat. Inasmuch as most cardiac arrests are associated with operation the subject is of especial interest to both surgeons and anesthetists.

Some say that cardiac arrest is on the increase. If this is true it is because situations leading to cardiac arrest are increasing. Some of these predisposing factors are: (1) more formidable surgery is being performed; particularly intrathoracic surgery. Factors precipitating cardiac arrest are greater in this type of surgery. (2) Operations are unnecessarily long. Refinements in methods of anesthesia and surgical technique have led some surgeons to become unduly complacent and to disregard operating time. Consequently four, five, and six hour procedures are not uncommon. (3) The widespread use of combinations of drugs, particularly the nonvolatile anesthetic drugs may have a bearing on the increased incidence. (4) The extension of the life expectancy of the general population accounts for the increase in the number of surgical patients in the upper decades. Many of these have advanced, degenerative diseases and do not always withstand the operation.

The problem of cardiac arrest presents two phases, that of prevention and that of treatment. Many cardiac arrests are unjustifiably blamed on anesthesia. Fatalities associated with and solely due to general anesthesia result from (1) asphyxia, (2) overdosage, (3) a combination of asphyxia and overdosage, (4) untoward reactions or to misuse of drugs. Fatalities ascribed to anesthesia but due to other causes usually result from (1) pulmonary emboli, from clots, air or fat or (2) cardiac failure from coronary insufficiency. Severe irreversible shock or massive hemorrhage causes death but rarely is it sudden. There is a forewarning of the catastrophe and death comes as no surprise. Cerebral accidents are uncommon during operation, and when they do occur, rarely precipitate sudden death. Adrenal insufficiency, though rare, may cause sudden death during operation.

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† Department of Anesthesia, Charity Hospital, and Dept. of Surgery, Louisiana State University School of Medicine, New Orleans, Louisiana.

When postmortem examinations are lacking, deaths are often ascribed to obscure highly speculative causes. The mythical status lymphaticus has, in the past, been used to excuse technical anesthetic errors. This syndrome does not exist as a clinical entity. Another convenient alibi for technical errors or unexplained fatalities is the somewhat controversial vago-vagal reflex. The occurrence of the reflex cannot be denied, but how often it causes fatalities is another matter. Many clinicians feel the reflex causes death only when associated with anoxia or carbon dioxide excess or both. Death does not occur if the subject is adequately ventilated irrespective of the intensity of the stimulus. The writer subscribes to this view.

Most fatalities due to anesthesia are unexpected and occur in the operating room. Some postoperative deaths, however, result from insidious deterioration not related to anesthesia which begins during operation. Others result from some difficulty with anesthesia during operation the results of which carry over to the postoperative period. The anesthetic death is delayed.

Fatalities due to asphyxia are due to (1) reduction of oxygen tension in the inhaled mixture below the physiologic limit. (2) Obstruction of the airway. (3) Hypoventilation from respiratory depression or apnea from respiratory paralysis. Anoxia is usually considered the responsible factor in obstruction and hypoventilation. However, respiratory acidosis may be more responsible than suboxygenation. Experimentally, ventricular fibrillation is easily induced by irritating the heart mechanically or stimulating the vagi during respiratory acidosis even though oxygenation is adequate.

Accidents due to administering inadequate concentrations of oxygen may be caused by (1) defective apparatus which fails to deliver the necessary gas flow, even though the instruments indicate an adequate flow; (2) inadvertently administering the wrong gas instead of oxygen; (3) mechanical factors due to defects in apparatus. Kinking, compressing, plugging or improper placement of endotracheal tubes, defects in the valves or tubing or improper use of shut-off valves may interfere with ventilation and cause asphyxia. Cylinders containing helium, nitrous oxide and ethylene have inadvertently been substituted for oxygen and the error has resulted in fatalities. (4) Administering gases of low potency, which require high alveolar partial pressure for anesthesia, above their safe limit, particularly when administered in resistant individuals. Death then occurs from anoxic anoxia. This type of accident is responsible for fatalities due to nitrous oxide or ethylene. In anemic individuals partial pressures of oxygen tolerated without harm by the average person, prove fatal. Anesthetists who rely upon cyanosis as a guide to the degree of oxygenation are deluded into a false sense of security when anesthetizing anemic patients. Cyanosis may not appear until fatal anoxia is present.

Overdosage of general anesthetics causes apnea which is easily corrected by adequate artificial respiration. It is possible, with most anesthetic drugs, to induce respiratory failure by overdosage and still sustain life by artificial respiration. The lethal dose of most anesthetic drugs is greater than the dose which causes medullary paralysis. The more potent and rapid acting an anesthetic is, the greater the danger from lethal concentrations. Fatalities from overdosage are often the result of nonchalance on the part of the administrator. Apnea due to overdosage has been mistaken for one due to a reflex or acapnia and proper measures to ventilate the patient were not instituted promptly.

Untoward reactions to drugs, surprisingly account for comparatively few unexpected deaths. Combinations of drugs which increase cardiac irritability may cause ventricular fibrillation. Ethyl chloride, chloroform, cyclopropane, trichlorethylene all increase cardiac irritability. When administered with epinephrine and related

sympathomimetic drugs ventricular fibrillation results. These drugs may also depress the myocardium and cause asystole. Intolerance particularly to nonvolatile substances is uncommon but accounts for some fatalities. The response is identical to overdosage. When a drug is incriminated as the cause of death it is the abuse rather than the use which is responsible. The increased use of combinations of nonvolatile anesthetics, relaxing agents and inhalation anesthetics has been blamed for the alleged mounting death rate from anesthesia.

Fatalities associated with anesthesia occur at any time, but they are most frequent during the induction or at the conclusion of anesthesia. They are less frequent during maintenance. There are various reasons for this. Vomiting and its attendant asphyxia occurs more often during induction. Asphyxial concentrations of primary agents such as nitrous oxide or ethylene are used during the induction. Obstruction develops at this time in individuals inclined to become obstructed such as the obese, spastics or asthmatics. Once the difficulties of induction are overcome and anesthesia has been established matters usually continue smoothly. Nonchalance, carelessness, or thoughtlessness are often the underlying factors responsible when complications develop during the maintenance phase. Overdosage during the maintenance phase causes death when the anesthetist is thoughtless, inattentive and is unaware of his difficulty and does not institute artificial respiration immediately.

Aspiration and obstruction are the most common causes of asphyxia in the immediate postanesthetic period. There is a tendency at this time for members of the operating team to relax their vigilance and for senior members of the surgical staff to relegate the patient to the care of less experienced persons. The thoughtless anesthetist neglects the patient to complete the chart, to arrange for details of the next anesthetic or to attend to comparatively trivial chores. The careful anesthetist remains with, and observes the patient closely until all reflexes have returned and the possibility of respiratory obstruction has passed. During the immediate postanesthetic period the anesthetist must remain with the patient until the possibility of respiratory obstruction, emesis, and circulatory collapse have passed. This is the most dangerous period and the one accompanied by the greatest number of fatalities.

These forementioned causes of death apply to general anesthesia, but regional anesthesia also has its hazards. Spinal anesthesia is ideal for many types of surgery but when misused is hazardous. Death from spinal anesthesia is caused by respiratory paralysis or circulatory collapse. Both complications appear shortly after induction of the block. Respiratory failure results. If sufficient concentrations of the drug pass into the upper thoracic and cervical portion of the spinal canal the intercostal muscles and the diaphragm are paralyzed and apnea results. If recognized and treated immediately with artificial respiration this accident is not serious. However, if overlooked and not treated promptly the circulation fails and death results from asphyxia. An attentive spinal anesthetist closely observes both the respiratory exchange and the status of the circulatory system. Of the two complications circulatory collapse causes the most deaths. The cause of the collapse has not been established. A number of factors are involved, such as pooling of the venous blood in the relaxed muscles, and loss of vasomotor tone due to the sympathetic paralysis. The severity of the circulatory disturbances increases as more dermatomes are anesthetized. Fortunately this circulatory derangement is effectively treated by vasopressor drugs. Untreated hypotension during spinal anesthesia progresses to the point of complete collapse and cardiac arrest. Pre-existing disease of the circulatory system increases the hazard of spinal anesthesia. Patients with myocardial disease, anemia, hypotension, increased intra-abdominal pressure

from ascites, large tumor masses or gaseous distention are poor subjects for spinal anesthesia because they often develop sudden severe irreversible hypotension.

There is a deep-rooted impression in the minds of many that local anesthesia is the safest and best for poor risk patients. Although generally true, shock and other complications of surgery may occur as readily during operations performed with local anesthesia as with general anesthesia.

Unfortunately some accidents occur because the anesthetist is thoughtless. The anesthetist who does not attend to the patient constantly while administering an anesthetic is a dangerous individual. Any anesthetist who walks about the operating room, gazes out of the window or leaves the room to smoke or to make a telephone call is a thoughtless one. A capable surgeon aware of the fundamentals and hazards of anesthesia expects nothing more of an anesthetist than the administration of the anesthetic. He appreciates the constant vigil of a conscientious anesthetist. Too often the anesthetist is expected to perform tasks incidental to but not related to anesthesia which take him from his patient. Such distractions have been responsible for fatalities or near fatalities. Constant attendance on the patient regardless of the type of anesthesia being administered must be practiced by responsible individuals. Such tasks as starting infusions or transfusions, shifting of lights, cranking the table are none of the anesthetist's concern and should be relegated to other members of the operating team, unsterile nurses or orderlies.

In studying operating room deaths it is remarkable how frequently the statement is made in relating the sequence of events leading to the accident "the patient was doing well but all of a sudden he stopped breathing and we could not feel the pulse." However, it is also interesting to note, upon further questioning, that significant prodromal signs were not recognized. Changes in the character of respiration and the quality of the pulse and the activity of the reflexes or in the status of the neuromuscular system, any of which are significant warnings of impending disaster to an experienced observer, were overlooked. At times failure to observe and heed these warnings is not necessarily due to thoughtlessness or neglect but rather to a lack of experience or knowledge of the science of anesthesiology. Unless one who administers anesthetics is familiar with human physiology and of the pharmacology of anesthetic drugs and how such drugs affect the patient's disease, he is merely a technician and not an anesthesiologist.

The results of cardiac massage and defibrillation are disapointing more often than not. To be successful cardiac resuscitation must be instituted without delay. Many attempts at cardiac resuscitation are successful as far as restoration of the beat is concerned but the patient ultimately dies because the circulation was interrupted too long and cerebral damage resulted. Those who survive have serious neurologic sequelae and often impaired mental processes. Valuable time is wasted listening with stethoscopes, attempting to obtain electrocardiographic tracings or injecting intracardiac epinephrine. An incision should be made between the fourth and fifth ribs on the left side as soon as one suspects the heart has stopped. The incision must not be extended too far medially towards the sternum otherwise the internal mammary vessels are cut. The ribs are spread and held apart, the heart is grasped in the hand between the thumb and other fingers and massaged as rapidly as the operator can without causing trauma to the muscle. Every 10 or 15 beats the aorta is compressed to force the blood through the coronary vessels. Too great an intrathoracic pressure must not be exerted in doing artificial respiration because it interferes with the venous return to the heart. If the myocardium is atonic 2 cc of a 0.5% solution of barium chloride may be injected into the ventricle to increase tone. Whether or not to use epinephrine is controversial because the

drug increases cardiac irritability and may precipitate ventricular fibrillation. It is indicated, however, when the heart is depressed and atonic. It should be injected into the right auricle and not the ventricle. It is not necessary to open the pericardium for massage. A less desirable method of compressing the heart is through an abdominal incision on the left side behind the diaphragm. This can be done when arrest occurs during abdominal surgery until one opens the chest.

If instead of asystole ventricular fibrillation has occurred cardiac massage is commenced and continued until a defibrillator is readied for use. Adequate blood flow to the myocardium and cerebrum is thus maintained during the period of waiting. A fibrillating heart cannot be restored to a normal rhythm by massage or drugs. The defibrillator delivers an ordinary 110 volt 60 cycle alternating current at 1½ amperes through two circular electrodes approximately 3 inches in diameter applied to each surface of the heart. The organ is shocked 3 to 7 times for one tenth of a second at two second intervals between shocks. Before the shocks are applied the heart is massaged for thirty to forty seconds in order to expel the blood from its chambers to overcome any dilatation which exists. After defibrillation it is necessary to massage the heart because asystole follows the shocks.

Neither highly specialized training nor elaborate equipment is required in emergencies involving cardiac arrest. The chance of performing the procedure on someone who might have survived without massage must be accepted. In order to be of any value and to be effective, a systolic blood pressure of at least 60 to 80 mm. Hg. should be maintained. If this pressure is not maintained, the massage is not effective and more vigorous attempts must be made.

UNEXPLAINED HYPERTROPHY OF THE HEART IN INFANTS AND CHILDREN *

HENRY C. McGILL, JR., M. D. †
JACKSON L. THATCHER, M. D. †
NEW ORLEANS

Pediatricians and pathologists have long recognized "idiopathic hypertrophy of the heart" as a rare condition causing rapidly developing heart failure in infants and children, with the only significant autopsy finding being unexplained cardiomegaly. In recent years, an entity called "endocardial fibroelastosis" has been described with increasing frequency and has been widely accepted as a distinct disease leading to cardiac enlargement and accounting for a large proportion of the cases formerly classified as "idiopathic hypertrophy". Evidence will be presented here confirming the impression of the greatly increased incidence of this condition in the past few years; but the cases studied locally have led to the conclusion that endocardial fibroelastosis does not represent a definite pathologic entity, contrary to the prevailing opinion.

In cases of idiopathic hypertrophy, reports of which go back into the medical literature of the 19th century, the hearts were usually described as showing endocardial thickening,[12] and in cases of fetal endocarditis, as it was called during that period, the hearts were usually described as showing marked hypertrophy.[9] Both conditions were considered to be very rare. In the early 1940's the now widely used term, endocardial fibroelastosis, replaced fetal endocarditis and from about this time articles concerned with this disease began to appear much more frequently and began to include greater numbers of cases. During this time reports and discussions of idiopathic hypertrophy became less and less common. With a few excep-

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† From the Departments of Pathology, Louisiana State University School of Medicine and Charity Hospital of Louisiana at New Orleans. Supported by a grant from the Louisiana Heart Association.

tions[4] the papers on endocardial fibroelastosis did not indicate any clear relationship between the cases discussed and the previously described cases of idiopathic hypertrophy. Selected items from the literature of the past twenty years illustrating the trend, both in frequency and nomenclature, are summarized in Table 1.

The present study was undertaken in order to determine the local incidence of this condition, whatever its proper name might be, and to attempt to clarify the significance of endocardial fibrosis with respect to hypertrophy. The noncommittal term "unexplained enlargement of the heart" was used to refer to a heart approximately twice or greater the expected weight according to age, and showing no gross or microscopic abnormality which might reasonably account for hypertrophy such as septal defects, stenotic valves, coarctation of the aorta, myocarditis, von Gierke's disease, etc. The presence of endocardial thickening, for these purposes, was not considered an adequate cause for hypertrophy. Autopsy protocols from Charity Hospital at New Orleans on children between the ages of two weeks and two years were reviewed for several recent years and also for several one year periods one and two decades previously. The lower limit of this age group was selected because the autopsy records on infants under two weeks of age were generally not sufficiently complete for review, and the upper limit was selected because both in our experience and in the literature, the incidence of such cases is quite rare over the age of two years.

The results of a simple count of the cases found, in comparison with a count of the usual forms of congenital heart disease, are summarized in Table 2. It is seen that in the recent years, unexplained cardiac enlargement—as defined above—is found in a quite appreciable number of children dying in this age group, and in fact is approximately one-half as frequent as the other forms of congenital heart disease lumped together. This incidence agrees remarkably, insofar as comparison

TABLE 1

SUMMARY OF SELECTED REPORTS FROM THE RECENT LITERATURE CONCERNING "IDIOPATHIC HYPERTROPHY" AND "ENDOCARDIAL FIBROELASTOSIS" OF THE HEART

Year	Authors	Nomenclature	Frequency Indicated	Cases Described
1933	Kugel and Stoloff[12]	Idiopathic hypertrophy	Very rare	7
1939	Mahon[14]	Idiopathic hypertrophy with endocardial fibrosis	Rare	2
1941	Gross[9]	Fetal endocarditis	—	1
1942	Sano and Anderson[19]	Elastic tissue hyperplasia of endocardium	—	1
1943	Weinberg and Himelfarb[21]	Endocardial fibroelastosis	—	2*
1950	Prior and Wyatt[16]	Endocardial fibroelastosis	—	8
1951	Collier and Rosahn[3]	Endocardial fibroelastosis	2 out of 205 under 2 years	2
1952	Johnson[11]	Endocardial fibroelastosis	—	23
1952	Adams and Katz[1]	Endocardial fibroelastosis	—	21
1952	Blumberg and Lyon[2]	Endocardial sclerosis	Common	25
1953	Lambert, Shumway, and Terplan[13]	Endocardial fibrosis	Half other congenital heart disease	4
1953	Rosenbaum, Nadas, and Neuhauser[18]	Subendocardial sclerosis	Frequent	10
1953	Denis, Hansen, and Corpening[5]	Endocardial fibroelastosis	Common	—

* Two cases described in siblings

TABLE 2

Year	Total No. Autopsies All Ages	Autopsies in Age Group 2 wks - 2 yrs.	Congenital Heart Disease		Unexplained Cardiac Hypertrophy	
			No.	Percent	No.	Percent
1929	553	56	0	0	0	0
1940	1,367	115	2	1.7	1*	0.8
1941	1,241	103	2	1.9	1*	0.9
1942	872	72	3	4.2	0	0
1943	1,001	107	6	5.6	0	0
1949	—	36	5	14.0	3	8.0
1952-53	—	82	11	14.0	6	7.0

* Possible cases of type under discussion but not definitely proven, due to lack of sufficient data.

is possible, with the figures presented by Lambert, Shumway, and Terplan from Buffalo,[13] in which they report 15 cases of "endocardial fibrosis" to 33 cases of various forms of congenital heart disease between 1935 and 1952.

Our failure to find such numerous examples in the earlier years reviewed seems to indicate a genuine increase in the proportion of these cases coming to autopsy. It is possible that a few such abnormal hearts were overlooked in the earlier years, and this possibility cannot be completely eliminated because some of the heart weights are not recorded. However, the heart weights in cases where it was recorded did not disclose any undiagnosed cases.

The next step was to study in greater detail a series of recent cases of unexplained hypertrophy of the heart in children on which adequate clinical and pathologic data was available. Clinical charts, autopsy protocols, microscopic sections, and gross specimens and photographs were collected on a total of 14 such cases.

REVIEW OF CLINICAL RECORDS

A striking feature of the clinical histories of these children was the short duration of their acute illnesses. One out of 14 had had symptoms for a month; 9 had been ill for two to seven days, and 4 had been ill for one day or less. The most prominent symptoms were those of an upper respiratory infection, often described as a "cold", with cough, fever, and dyspnea. Many of the cases were seen in the outpatient clinic and dismissed after treatment with antibiotics, only to return within hours with a severely dyspneic and sometimes cyanotic child. At least one of the patients was dead on arrival.

Physical examination on admission usually disclosed acutely ill infants with dyspnea, fever (102° to 105°F.) and sometimes cyanosis. The heart was enlarged to physical examination and the rate was quite rapid, but no consistent murmurs were heard. There were usually rales over the lung fields. A few infants showed edema of the extremities. X-rays of the chest, when done, showed greatly enlarged hearts. Anemia of moderate degree was occasionally present but was by no means constant. White blood cell counts varied from 10,000 to 28,000 per cu. mm.

The fulminant nature of the terminal course is illustrated by the fact that most of the children died within twenty-four hours following admission. Consequently, many laboratory tests which might be of interest were not done.

Several of the articles in the recent literature have discussed the clinical signs and symptoms and the clinical aspects of the differential diagnosis quite thoroughly[5, 18, 13] and these features will not be expanded here.

REVIEW OF PATHOLOGIC FINDINGS

Some of the pertinent data on each case are summarized in Table 3. It is seen that the age incidence is fairly uniformly spread from about two to twenty-four months. No definite predilection for race or sex is apparent from this group. Since it is known that the body size varies widely in normal children at the same age, it appeared that it might be informative to relate the heart weight to body

TABLE 3
SUMMARY OF CASES OF UNEXPLAINED ENLARGEMENT OF THE HEART IN INFANTS AND CHILDREN OBSERVED AT CHARITY HOSPITAL

Age in Months	Race	Sex	Body wt. kgs.	Actual Heart wt. gms.	Heart wt. expected on basis of age gms.	$\frac{\text{Heart wt}}{\text{Body wt}} \times 100$	Thickness of endocardium lt. ventricle in microns
2 ½	C	F	—	70	23	—	125
3	C	M	5.4	74	23	1.4	100
3	W	F	5.5	65	23	1.2	150
4	C	F	5.0	45	27	0.90	150
4	C	F	5.3	66	27	1.3	140
5	W	F	3.6	60	29	1.7	250
7	C	M	—	75	34	—	300
8	C	M	7.7	70	37	0.99	50
8	W	F	7.2	116	37	1.6	200
14	C	F	13.5	125	45	0.93	210
20	C	M	13.6	163	56	1.2	280
23	C	F	15.0	126	56	0.84	100
24	C	M	13.2	124	56	0.94	250
24	C	M	—	110	56	—	25

weight in percentage terms. When this is done, it is seen that the figure varies from 0.84 to 1.7 per cent. The normal value for this figure is given as about 0.60 per cent for newborn infants, dropping to .50 per cent at two years and then to about 0.43 per cent for adult males and 0.40 per cent for adult females.[7]

The increased cardiac weight was invariably accompanied by extreme dilatation, most marked in the left ventricle. This is illustrated in Figures 1 and 2 by the globular shape of the left ventricular cavity and its large size in comparison with the ventricular walls. The myocardium was sometimes flabby but usually was of approximately normal consistency. In several hearts the outer half of the left ventricular myocardium appeared to be somewhat darker in color than the inner half. The endocardium appeared definitely thickened in the left ventricular chamber in most of the hearts, but in a few the endocardial thickening was not readily apparent in the gross specimen, as shown in Figure 2. The endocardium of the left auricle normally is thicker than that of any other chamber of the heart at all ages, but in these cases it appeared even thicker than normal. None of the hearts showed any grossly detectable endo-

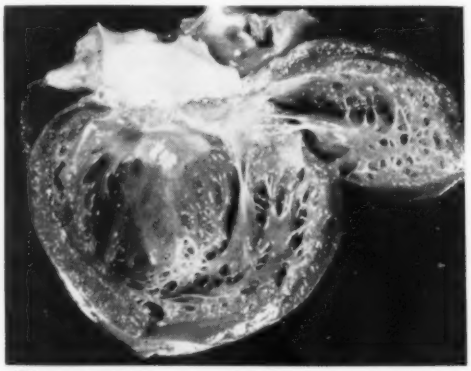

Figure 2. 126 gram heart of twenty-three month old colored female (expected weight: 56 grams) showing similar dilatation and hypertrophy, but with minimal endocardial thickening.

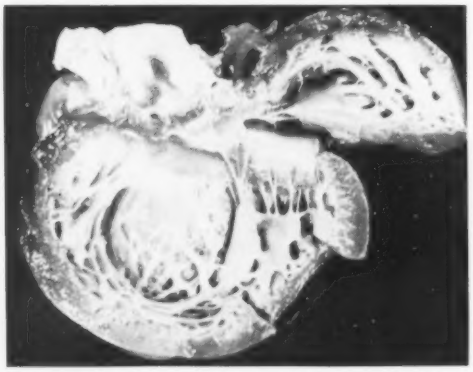

Figure 1. 66 gram heart of four month old colored female (expected weight: 27 grams) showing marked dilatation and hypertrophy of the left ventricular chamber and moderate translucent thickening of the endocardium.

cardial thickening in the right auricle or right ventricle.

The right ventricular myocardium, although never as thick as the left, was also usually hypertrophied so that both walls appeared to be in about the same proportionate size to one another as in the normal heart. Thus, if the heart were examined by itself outside the body, and if the endocardial thickening were not prominent, the only apparent abnormality would be dilatation of the ventricles, chiefly on the left side.

The only other fairly constant gross abnormalities noted in other organs were in the lungs, which were usually heavier than normal and consolidated to varying degrees. In a few cases there were red and yellow markings accentuating the lobular pattern in the liver characteristic of chronic passive congestion.

In all cases, microscopic sections of the myocardium and endocardium were available for study and in many of the cases, sections had been taken from the left ventricle, the interventricular septum, and the right ventricle of each heart. These were prepared with hematoxylin and eosin, Verhoff's elastic tissue stain, and the periodic acid Schiff reaction. The thickness of the endocardium from the lateral wall of the left ventricle was measured with an ocular micrometer and the results are tabulated in the right hand column in Table 3. These measurements cannot be presumed to be accurate representations of the thickness in the living state, but should give a fair quantitative comparison of the endocardial thickness in the sections, all of which were subjected to approximately the same artefactual shrinkage and distortion in the process of preparation. It is readily seen that the endocardial thickening varies widely and shows no apparent correlation with either age, body weight, heart weight, or heart weight to body weight ratio.

This thickened endocardium was composed of normal appearing collagenous and elastic tissue, with very few fibroblasts and no leucocytes. The line of demarcation between it and the underlying myocardium was fairly distinct, and no evidence of necrosis, cellular infiltration, or other degenerative change could be detected in the adjacent myocardial fibers. These features correspond closely with the findings reported by other authors and are illustrated in Figures 3 and 4. A normal heart from the same age group is shown in Figure 5.

The microscopic appearance of the myocardium presented no striking abnormalities. Since the myocardial fiber increases in size from birth to adulthood, hypertrophy of the fibers is difficult to judge in children. In only 4 of the 14 hearts did there appear to be an actual increase in

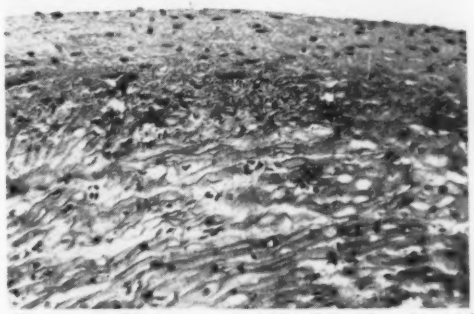

Figure 3. Eight month old white female with 116 gram heart. Section stained with hematoxylin and eosin shows endocardium of left ventricle measuring approximately 200 microns in thickness, composed of mature collagenous and elastic fibers. The underlying myocardium appears relatively normal.

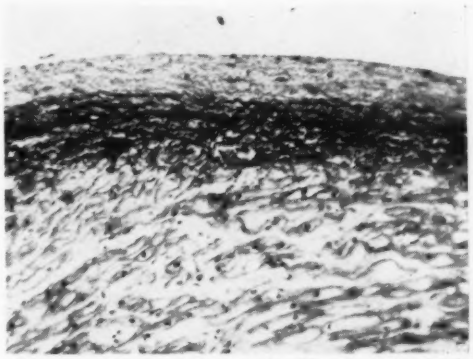

Figure 4. Same tissue as in Fig. 3, stained with Verhoff's elastic tissue stain, showing band of darkly staining elastic fibers in deeper layers of endocardium.

Figure 5. Fifteen month old colored male dying of meningitis with 58 gram heart (expected weight: 48 grams), an apparently normal heart for comparison. Section from left ventricular endocardium stained with hematoxylin and eosin shows very thin endocardium, at thickest point less than 20 microns in thickness.

the size of the fibers beyond that expected for the child's age, and in only 2 cases were there seen the nuclear changes generally associated with hypertrophy (enlargement, hyperchromatism, blunt ends). Hyperplasia is said to occur in the myocardium,[17] particularly in infants, but is even more difficult to appraise. A few sections gave the impression that there were an increased number of nuclei per unit of cross sectional area, but no counts were performed to confirm this impression. The usual appearance of the myocardium is illustrated in Figure 6.

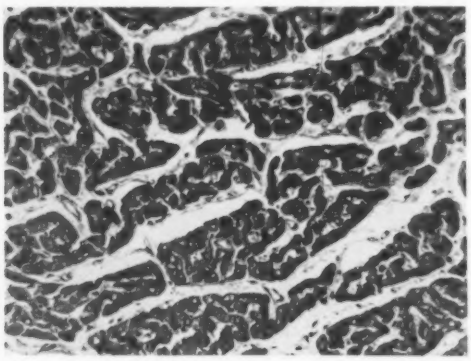

Figure 6. Twenty month old colored male with 163 gram heart (expected weight: 56 grams). Section stained with hematoxylin and eosin shows the appearance of the myocardium seen in most of the cases, with possibly slight enlargement of muscle fibers; no marked changes in nuclei, and no evidence of myocardial degeneration, fibrosis, or inflammation. The separation of the muscle bundles is probably an artefact of preparation.

A remarkable feature in all the hearts was the frequent similarity in microscopic appearance of the myocardium from both the right and left ventricles and interventricular septum, despite the consistent difference in the endocardium which was never significantly thickened in the right ventricle or right auricle. Whatever the cause of the enlargement, it seemed to affect all parts of the myocardium uniformly, although the endocardium became thickened only in the chambers on the left side.

Large blood vessels showed no abnormalities, either in the heart or in other organs. Capillaries in the outer half of the left ventricular myocardium were distended and prominent, corresponding with the darker color of this portion noted grossly. This vascular congestion in the outer portion was not noted in the right ventricle.

The most constant change in the lung was thickening of the alveolar septa chiefly due to monocytic infiltration, interpreted as interstitial pneumonia. This anatomic lesion, present in 10 of the 12 cases where sections of lung were available for review, corresponds with the symptoms of respiratory infection noted clinically. In 6 of the 12 cases there was dilatation and tortuosity of capillaries and accumulation of hemosiderin pigment in macrophages in the alveoli, changes which were considered indicative of passive congestion of the lungs.

In the liver, 4 of 12 cases showed central necrosis, also thought to be indicative of passive congestion. No other remarkable changes were noted in sections of the liver.

Several of the cases showed interesting but enigmatic changes in the kidneys. In 2 out of 12, hyperplastic tortuous arterioles were seen in the renal cortex. In 2 other kidneys there were numerous calcified casts in the renal tubules. One case showed many enormously dilated tubules, but not to the degree of a true polycystic kidney in infancy, possibly rep-

resenting an early stage in the development of adult type polycystic kidneys.

None of the other viscera for which microscopic sections were available showed any consistent changes to which any significance could be attached.

COMMENT

The above described data appear to indicate that at least two of the objectives of this preliminary study were achieved. In the first place, this entity—a respiratory infection associated with rapidly developing heart failure, death, and enlargement of the heart at autopsy—is not at all uncommon among children coming to autopsy at Charity Hospital in recent years. It is possible that the cardiac enlargement may have been overlooked in previous years, but a review of heart weights in autopsy records does not disclose any evidence that the condition occurred with a similar frequency and was overlooked. Our conclusion, therefore, is that this disease entity is responsible for an increasing proportion of deaths in this age group.

A second question—is endocardial fibroelastosis a distinct entity which has been clearly set apart from so-called idiopathic hypertrophy—we believe has also been partially answered. In this series of cases, endocardial thickening was constantly present, but the degree of thickening was extremely variable. No unexplained enlargement of the heart was found without endocardial thickening of some degree, and no sharp line of demarcation could be drawn between those cases with minimal thickening and those cases with maximum thickening. It would seem that there is some fundamental disturbance which leads to an increase in the mass of the myocardium and eventually to cardiac failure, and which also directly or indirectly causes proliferation of the endocardial connective tissues.

It is well established that endocardial fibroelastosis, indistinguishable from that seen in the cases described here and other reported cases considered typical, can be found in hearts where there is a definite structural abnormality which appears to account for the hypertrophy quite adequately. We have on hand cases of patent ductus arteriosus, coarctation of the aorta, and even von Gierke's disease which illustrate this fact.[15] At least one case of hypertension in a child was described as showing fibrous endocardial thickening.[20] In fact, one author believes that all cases of endocardial fibroelastosis are accounted for by some associated malformation which can produce endocardial anoxia.[11] Such findings, we think, support the idea that the endocardial thickening is a nonspecific response to some injury to the heart, the same injury which leads to hypertrophy.

Although cases showing endocardial fibroelastosis have been reported in stillborn, premature, and neonatal infants,[16] none have come to our attention in recent years at this hospital. As was pointed out earlier, the records kept on these infants are not sufficiently complete for review, and consequently, there is a serious gap in this study, which we are presently trying to fill. If the endocardial thickening is a nonspecific reaction to injury, it would indeed be surprising if it were not found under some conditions in the prenatal and neonatal periods, just as in the older age groups.

We feel that more attention should be focused on the altered physiology which causes the cardiac hypertrophy in these cases, and that the mysterious "fundamental disturbance" referred to above will be something of this nature rather than a genetically determined congenital defect in the endocardium. Cardiac hypertrophy is generally considered a response to increased work, but no known condition causing increased work for the heart has been demonstrated in the cases under consideration. It is incredible that anoxia, often suggested as the cause of the endocardial proliferation, could lead to such tremendous cardiac hypertrophy without itself producing striking clinical manifestations. The many defects in our basic knowledge about cardiac hypertrophy have been pointed out in a recent provocative review,[8] but at least it has been conclu-

sively demonstrated that the hearts of young animals can undergo hypertrophy very rapidly.[10, 6] A dramatic example of this was seen in the case of a two week old infant with thrombosis of the abdominal aorta and one renal artery, a lesion which had developed following birth, in which the heart was double the expected weight—the hypertrophy presumably having taken place within two weeks or less.[15] (This heart, incidentally, showed no endocardial thickening). It would not be inconceivable, therefore, that the cardiac hypertrophy found in the children we are concerned with could have developed within a relatively short period of time—that is, a few weeks. This concept would fit with the very common observation that these children grow and develop normally and to all outward appearances are normal until the onset of severe, rapidly progressive symptoms.

It is important, then, that information regarding this condition be disseminated widely in order that cases may be recognized at an early stage and studied more thoroughly by clinical methods before death. The striking cardiac enlargement observed on physical examination and x-ray examination of the chest without consistent murmurs may make it possible to identify children who survive and recover. Furthermore, it should be of considerable interest to the physician in general practice to be aware of this condition in view of its increasing incidence and especially the fulminating course and unanticipated death in many of the fatal cases.

SUMMARY

The incidence of cases of children coming to autopsy with unexplained cardiac hypertrophy and varying degrees of endocardial fibroelastosis appears to have increased markedly in recent years at Charity Hospital, and 14 of these cases have been reviewed in detail. The findings with respect to both frequency and pathologic anatomy confirm those reported in the recent literature. Attention is called to the variability of the endocardial thickening and the similarity of some of the cases with minimal thickening to what was formerly called idiopathic hypertrophy. It is concluded from a study of these cases that the endocardial proliferation is not the basic lesion and the need for studying the nature and cause of the myocardial hypertrophy is emphasized.

The salient feature of the clinical picture is enlargement of the heart on physical examination or x-ray examination of the chest. Clinical recognition is very important from the standpoint of both research and general practice.

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SURGICALLY CORRECTABLE CONGENITAL ANOMALIES ENCOUNTERED IN EARLY INFANCY: A CLINICO-PATHOLOGICAL STUDY *

JOHN H. DENT, M. D. † ‡
HERBERT H. ROBINSON, M. D. †
NEW ORLEANS

Reduction in infant mortality in the past decade is one of the triumphs of modern medicine. Many factors responsible for decline in both mortality and morbidity have been well documented elsewhere.[1] Not the least important of these has been a better general understanding of the nature of disease encountered in early infancy. Familiarity with special pathology in this age group is, in a large measure, responsible for improved diagnostic methods and better clinical management. For example, prior to 1939, the mortality rate in tracheoesophageal fistulas was 100 per cent. Today, under optimal conditions, approximately 70 per cent of these patients can be salvaged.[10, 11]

A consideration of many causes of death in the neonatal period in a large number of autopsies has been reported previously by Potter.[2] In Potter's series approximately 12 per cent of the neonatal deaths were attributable to congenital malformations. The present study is based on a group of 1557 postmortem examinations done from 1927 through 1953 on stillborn infants and infants under the age of 1 year. (Table 1) Our data are in agreement with Potter's findings.

Extrinsic and intrinsic factors responsible for the maldevelopment of the human embryo are poorly understood. The incidence of all types of congenital anomalies seen in the new born at Charity Hospital in New Orleans is 24 per 1000 live births.[3] It is known that malformations of organ systems have their beginnings early in the developmental period. By the tenth to the twelfth week following nidation the final anatomic form of the embryo has been largely achieved. However, the fetus is still subject to the modifying effects of early uterine environment.

TABLE 1

Dates	Number of Autopsies Performed on Infants Under 1 year	Serious Anomalies	Per cent with Anomalies
1947	188	23	12.2
1948	191	20	10.4
1949	194	28	14.4
1950	233	31	13.3
1951	188	33	17.6
1952	263	39	14.8
1953	320	28	8.8
TOTAL	1577	202	12.8

Reasonably specific environmental factors that are thought adversely to influence dynamic processes of early development include, infection with the rubella virus, x-radiation, and deficient diet. Local diseases of the endometrium, while occasionally responsible for early fetal death and miscarriage, probably are incapable of causing malformations in viable infants.

Anomalies in the infant attributed to maternal rubella [4] contracted during the first trimester of pregnancy include varying combinations of cataracts, deafmutism, and certain anomalies of the heart. We have encountered no proved example of this syndrome at autopsy.

Irradiation of the pregnant uterus has in some instances been followed by microcephalic mentally deficient infants. Apparently, developing nervous tissue is particularly vulnerable to radiation injury.[5, 6, 7, 17] Additional genetic hazards have been introduced following the development of atomic energy. The exposure of large segments of the population to high-energy radiation is likely to increase the number of defective individuals in future generations.[20]

Experimental evidence in lower animals [8] suggests that dietary inadequacies

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† From the Departments of Pathology and Pediatrics, Tulane Medical School and Charity Hospital of Louisiana, at New Orleans.

‡ Children's Clinic, 3439 Prytania Street, New Orleans, La.

may be responsible for fetal maldevelopments. There is little direct clinical or experimental evidence to indicate what part a deficient maternal diet may play in causing anomalies in human beings, aside from endemic cretinism which is related to a lack of iodine. However, congenital malformations occur more often in infants born to diabetic mothers.[13] The developing infant is susceptible to a number of maternal diseases.[14]

The purpose of this report is to reemphasize the pathological features of a few of the more frequent anomalies that lend themselves to correction by early and intelligent surgical intervention soon after the baby is born. Although many infants have multiple anomalies (Table 2), any one of which might be lethal, a surprisingly high percentage of the malformed infants that survive for a few days have only a single major anomaly, that one being amenable to surgical correction. An examination of Table 3 will show the systems most frequently affected by single or multiple congenital anomalies in our autopsies. In approximately 25 per cent, more than one major anomaly existed at the time of death.

The data herein will be presented by systems in order to stress both the clinical and pathological aspects of the correctable anomalies that we have encountered. Patients with multiple anomalies have been arbitrarily listed under the organ-system presenting the most serious anomaly. Minor anomalies are not included in Tables 2 and 3.

TABLE 2

SUMMARY OF THE DISTRIBUTIONS OF MAJOR ANOMALIES OCCURRING IN ONE OR MORE SYSTEMS IN 202 AUTOPSIES (STILLBORNS AND INFANTS UNDER ONE YEAR)

System	Isolated Anomalies	With Associated Anomalies Involving Other Systems	Per cent with Associated Anomalies
Gastrointestinal	26	12	33
Respiratory including Diaphragm	2	6	75
Cardiovascular	49	18	27
Genito-Urinary	13	13	50
Central Nervous	18	30	63
Miscellaneous	10	5	33

TABLE 3

ALL ISOLATED AND MULTIPLE CONGENITAL ANOMALIES IN 202 AUTOPSIES BY SYSTEMS (STILLBORNS AND INFANTS UNDER ONE YEAR)

Major Systems Involved	Number of Anomalies	Per cent of the Total
Gastrointestinal	38	18.8
Respiratory and diaphragm	8	4.0
Cardiovascular	67	33.1
Genito-Urinary	27	13.4
Central Nervous	47	23.3
Miscellaneous anomalies	15	7.4
Total	202	100.0

GASTROINTESTINAL SYSTEM

Of 202 patients with congenital anomalies encountered in the entire group, 38 had major lesions in the gastrointestinal tract. Since anomalies here often cause obstruction it is obvious that diagnosis and treatment must be prompt since uncorrected intestinal obstruction is rapidly fatal. There were 8 causes of tracheoesophageal fistula, 7 of biliary atresia, 5 of stenosis or atresia of the small bowel—including duodenum — 2 of incarcerated internal hernia, 1 of malrotation with duodenal obstruction, 1 omphalocele, 1 with congenital megacolon, 1 pyloric stenosis, 2 of volvulus of midgut, 2 of Meckel's diverticulum as an isolated anomaly that caused death, 4 of meconium ileus, 1 of malrotation with volvulus of cecum, and 2 of imperforate anus. It is noteworthy that only one case of pyloric stenosis came to autopsy in the seven year period covered by this report. Within the past year alone, 21 babies with pyloric stenosis were treated by our Service without a single death.

An analysis of maternal histories failed to reveal any common factor that could be established as being causally related to these malformations of the gastrointestinal tract.

Tracheo-esophageal Fistula.—During the past fourteen years, because of better diagnosis, together with improved techniques in surgery and anesthesiology, approximately 70 per cent of patients with tracheo-esophageal fistula can be saved.[11] In order to arrive at an early diagnosis it is important to understand the anatomical peculiarities which arise from the malformation of this portion of the gastrointestinal tract. Four anatomical variants are well known. Approximately 90 per cent have a lower segment communicating with the trachea and an upper one ending as a blind sac. Bearing the relationship in mind, clinical symptoms immediately take on significance. New born infants who show excessive amounts of saliva or who become cyanotic upon attempts at feeding may have this anomaly. The diagnosis is easily established by attempting to pass a small catheter down to the stomach. The point of obstruction, if it exists, can thus be easily ascertained. Additional x-ray evidence can be obtained by instillation of 1 or 2 cc. of lipiodol through the catheter. The x-ray picture will usually indicate the level of obstruction, and may show the fistula and type of anomaly which exists. Once the diagnosis is established there should be an early attempt at therapy. Prior to surgery these patients should be hydrated and given intensive chemotherapy. Adequate amounts of blood should be slowly given during the surgical procedure. A gastrostomy facilitates postoperative care of these patients and is a safeguard against distention of the stomach with vomiting and soiling of the suture line. Among our 8 cases there were important associated cardiac anomalies in 2, in 2 cases there were atresias of the duodenum, and in another there was duodenal obstruction with malrotation. Among these 8 cases, Meckel's diverticulum was an incidental finding in 3. Prematurity also frequently contributes substantially to the risk, although only one of ours was premature. It is obvious from a consideration of the type of anomaly under discussion that early diagnosis is necessary in order to prevent the infant from aspirating food or mucus into the lower respiratory tract, resulting in extensive aspiration pneumonia. In addition, if the lower segment of the esophagus communicates with the trachea, there may be a reflux of gastric contents into the air passages resulting in a severe necrotizing type of pneumonia. These infants should be kept in a semi-upright position until the fistula is surgically closed.

In our patients necrosis was frequently found at the site of surgical anastomosis of the esophageal segment. This usually results from failure to mobilize the esophagus adequately, thus putting too much tension on the sutures. Severe mediastinitis follows leakage at such a point.

Postoperative care of these patients is extremely important and in general consists of the use of proper fluids and electrolytes, intensive chemotherapy, and a gastrostomy tube to keep the stomach decompressed for twenty-four to thirty-six hours, after which small amounts of 10 per cent glucose may be given. The beginning of oral feeding is generally possible within a week to ten days following the anastomosis. Follow-up studies of patients who have been successfully repaired reveal that stenosis at the operative site is relatively rare and is more likely to occur during the first six months, after which time the growing esophagus will enlarge enough to prevent dysphagia. Repeated respiratory infections occurring several months after the closure of a tracheo-esophageal fistula suggests the possibility that the fistulous tract may have again become patent.

Stenosis and Atresia of the Intestinal Tract.—Another group of obstructive lesions encountered in early infancy is composed of cases of stenosis and atresia of the small bowel, the most common sites being encountered in the duodenum and terminal ileum. Four cases were found in this category.

The bowel from the pylorus to the ileocecal junction goes through three stages of development. Prior to the fifth

week a lumen is present in the intestinal tract. In the rapid turn of events the intestine passes through a solid stage due to rapid proliferation of epithelium. Later, these epithelial concrescences degenerate and a lumen is reestablished by about the twelfth week. The underlying basic disturbance in atresia or stenosis of the small bowel is failure of this recanalization. In general there are two anatomical types of atresia: In one there is a veil or membrane which completely blocks the lumen; in the other, the intestine ends as a blind sac or is simply joined to a more distal segment by a fibrous cord. The proximal segment is usually found to be tremendously dilated, with a thin wall. Necrosis and perforation are apt to occur early, often on the second or third day. The distal segment is collapsed and may be no more than a few millimeters in diameter; in a small percentage, there may be multiple atresias. It is important to distinguish between atresia and stenosis. As the term implies, atresia consists in complete obliteration of the lumen; whereas stenosis is only partial in this respect. The degree of stenosis will usually be found to correlate with severity of symptoms, and therefore, the urgency for surgical intervention. With atresia, symptoms begin immediately after birth and consist of vomiting, which is usually bile-stained and varies in character with the level of obstruction. The stools may at first be grossly indistinguishable from normal meconium. However, as Farber has shown, stained normal meconium spread on a slide will contain numerous epithelial cells and occasionally lanugo hair, attesting intestinal patency. If a meconium smear shows no desquamated epithelial cells or lanugo hair the likelihood of obstruction is very high. Fever may be present and if above 102° the possibility of peritonitis following spontaneous perforation is suggested. X-rays of the abdomen even without the use of contrast media will frequently indicate the level of obstruction. Once the diagnosis is made the patient is prepared for surgery by continuous gastric suction and proper parenteral fluids. Once the abdomen is entered and the point of atresia determined, a short circuiting procedure with a side-to-side anastomosis is generally indicated rather than a direct attack on the atretic area. If the site of obstruction is in the distal ileum or colon an exteriorization procedure of the Mikulicz type with early closure of the enterostomy is the procedure of choice. However, the maintenance of fluid and electrolyte balance in these patients with enterostomy poses a problem of considerable magnitude. Since *multiple* atresias occur in a significant number, exploration of the entire small bowel for other anomalies is imperative. Associated atresia of the colon is relatively rare, and intensive inspection of this organ at the time of operation is therefore not warranted.

As to stenosis of the small bowel, approximately 50 per cent of these occur in the duodenum and 25 per cent in the ileum. Symptoms may occur later than in cases of atresia and may be of a chronic or intermittent type. The finding of milk curds in the stool of course indicates at least partial patency of the bowel. With both atresia and stenosis of the duodenum, mongolism has been an associated finding in a relatively high per cent of reported cases.[11]

Malrotation of the Intestinal Tract.—Another important cause of intestinal obstruction encountered in early infancy is malrotation of the intestinal tract. The embryological explanation for this phenomenon is concerned with the development and final position of the gut supplied by the superior mesenteric artery extending from the duodenum to the mid-portion of the transverse colon. This anomaly is characterized by lack of attachment of the mesentery to the posterior abdominal wall and incomplete rotation of the cecum, or complete rotation of the cecum which has a long mesentery. Incomplete rotation of the cecum may obstruct the duodenum by bands of reflected peritoneum or the cecum itself may be

held in such a position over the duodenum that it causes obstruction. Occasionally the entire midgut will become twisted in such a manner as to obstruct the bowel at the two extremes and to occlude the superior mesenteric vessels, giving rise to infarction. Obstruction of the duodenum by an incompletely rotated cecum and volvulus of the midgut are closely associated, and both conditions must be corrected if obstructive symptoms are to be relieved. The clinical picture in early infancy is that of high intestinal obstruction with vomiting of bile. In older children symptoms may resemble those of celiac disease or "cyclic vomiting," and gastrointestinal studies using contrast media are indicated in such patients. On opening the abdomen, volvulus of the midgut is suggested when coils of the small intestine obscure the ascending and transverse colon, especially if the serosal surface is congested. If the cecum and transverse colon lie in the right upper quadrant, obstruction of the duodenum by peritoneal reflections may be the only anomaly. In our series one such case was encountered. The correct surgical procedure has been described by Ladd.[12] This relatively simple procedure will relieve the obstruction of the duodenum and likewise will correct volvulus of the midgut, if it coexists.

Other miscellaneous conditions responsible for intestinal obstruction in the newborn are incarcerated internal hernia, meconium ileus with perforation, and rarely malformations of anus or rectum. Annular pancreas with partial obstruction of the duodenum, and reduplications of the gastrointestinal tract are rarer causes of obstructive lesions in early infancy.

Malformations of the anus and rectum are associated with other major anomalies in approximately 50 per cent of reported cases.[15] In our series, associated lethal anomalies were consistently present. It is important for the surgeon to remember that several anatomical types may be encountered. A fistulous opening between the bowel and urinary tract is common and often consists of rectovaginal fistula in the female or rectovesical fistula in the male.[16]

There was one infant with omphalocele. Omphaloceles usually require operative repair within the first few hours of birth. The two-stage procedure consisting first of skin closure with later repair of the hernia is preferred. Any abdominal viscera including the liver may be within the thin walled avascular sac. Associated anomalies such as malrotation with intestinal obstruction, occasionally are encountered and may be responsible for persistent symptoms after surgical repair.

RESPIRATORY SYSTEM

Major anomalies of the respiratory system per se were encountered relatively infrequently. There were only 8 patients who had severe anomalies involving principally the respiratory tract or the diaphragm. Of these, 4 had diaphragmatic hernia, 1 had choanal atresia, 1 had hypoplasia of the lung, 1 had stenosis of the trachea, and 1 had an aberrant lobe of the right lung with no attachment to the bronchial tree.

The most frequent single anomaly in this group was congenital hernia of the diaphragm. Within the past decade there has been a change in the method by which these patients are treated. The former approach of "allowing the patient to grow and be in better condition" resulted in a staggering mortality rate, mostly during the neonatal period. The present policy is for immediate operation, and with this approach many more of these patients can be saved. The failure of the diaphragm to develop will result in defects in any one of several areas, the most common, over the posterior lateral portion of either side and more often on the left. In about nine-tenths of these herniations no hernial sac exists. Any abdominal viscera may be herniated through the defect and lie within the thoracic cavity. Infants with diaphragmatic hernia may show early cyanosis, dyspnea, or vomiting. The severity of symptoms correlates with the degree of crowding or compression of heart and lungs. Some infants may tolerate fairly large defects with relatively few symptoms.

It is difficult to diagnose this condition by physical examination alone. X-ray examination without contrast media will usually suffice to establish the diagnosis. Once this is established an operation to repair the hernia should be performed. Associated anomalies are relatively high. One of our cases had cardiac defects, 1 had bilateral polycystic kidneys, and 1 had internal hydrocephalus. Two of our patients exhibited emphysema of the normal lung with rupture subpleural blebs and tension pneumothorax. One of these occurred in a Bloxsom-type respirator and 1 probably resulted from over-zealous attempts at manual resuscitation. Adoption of the policy of early operation regardless of the extent of herniation or the critical condition of the patient can relieve a substantial proportion of these individuals.

CARDIOVASCULAR SYSTEM

Recent advances in surgery have produced remarkable results in the correction of anomalies of the cardiovascular system. Surgical results have added emphasis to the anatomical study of all types of malformations. Less than a decade ago, physicians in all branches of medicine were satisfied with the diagnosis of congenital heart disease and at least an implied hopeless prognosis. Today, with exacting and detailed studies, the exact nature of the defect can usually be elucidated, and improving surgical skills permit an increasingly good prognosis.

A detailed consideration of the various types of congenital heart disease is beyond the scope of this present report. However, out of 202 patients with anomalies, 67 had major malformations of the heart or great vessels (Table 4). The cardiovascular system was the most frequent major system involved singly or with others in this series. Associated anomalies were mongolism in 6, cleft palate and harelip in 5, diaphragmatic hernia in 3, Meckel's diverticulum in 4, internal hydrocephalus in 2, hydro-ureters in 2, and polycystic kidneys in 2. A study of maternal histories revealed the fact that 10 of these mothers were over thirty years of age.

TABLE 4

TYPES OF MAJOR CARDIOVASCULAR ANOMALIES IN 67 CASES OF CONGENITAL HEART DISEASE

Interventricular septal defect	12
Transposition of great vessels	11
Coarctation of aorta	5
Patent ductus	5
Pulmonary stenosis or atresia	5
Cor triloculare	4
Truncus arteriosus	4
Aberrant subclavian artery	3
Tetralogy of Fallot	3
Eisenmonger complex	2
Stenosis of aortic valve	2
Tricuspid stenosis	2
Atrioventricularis communis	1
Bicuspid aortic valve	1
Dextraposition of aorta	1
Hypoplastic aorta	1
Interarterial defect	1
Vascular ring	1
Miscellaneous	3
Total	67

Transposition of the great vessels, with or without septal defects, was the most common anomaly noted. The tetralogy of Fallot or its variants was the most frequent syndrome among those with cyanosis. Among these cases, with all deaths occurring below the age of one year, anomalies were for the most part not correctable and were incompatible with life beyond early infancy.

GENITO-URINARY SYSTEM

Anomalies of the genito-urinary tract were frequently encountered. There were 27 cases in this series. Of these, polycystic kidneys were noted in 14 instances and five of these delivered by the breech. Four cases of renal agenesis were present and 3 of these delivered by the breech. Four horseshoe kidneys were found without other significant anomalies.

With polycystic kidneys or bilateral agenesis death has occurred early, and as a rule, the cause of death was not suspected clinically.

Obstructive uropathy due to congenital urethral valves or hyperplasia of the verumontanum occurred in 6 of the 14 cases of polycystic kidneys.

Associated anomalies are relatively frequent and consist of 1 serious cardiac defect, 4 club foot deformities. 1 cleft pal-

ate and harelip, 3 pulmonary hypoplasias, and 1 obstructive hydrocephalus. Accompanying polycystic disease of the liver was seen in only 1 case. Minor skeletal anomalies were relatively frequent, being observed in 7 of these 27 cases.

CENTRAL NERVOUS SYSTEM

Among these cases there was a relatively high incidence of serious anomalies involving the central nervous system. The 2 most frequent types of malformations were anencephaly and hydrocephaly. Out of the 47 cases there were 26 hydrocephalics, 14 anencephalics. 1 meningoencephalocele; 2 meningoceles, 1 craniostenosis, and 1 cirsoid aneurysm. Among the communicating types of hydrocephalus there were 3 cases with agenesis of the cerebellum. With anencephaly and hydranencephaly, hypoplasia of the adrenals occurred in 100 per cent of the cases. Hypoplasia of the thyroid, while more difficult to evaluate, occurred in 3 cases of internal hydrocephalus and 1 case of hydranencephaly. Among the noncommunicating type of hydrocephalus there were 4 with occlusion of the aqueduct of Sylvius. In 3 a horseshoe kidney was present and 1 infant had an associated megacolon. Polyhydramnios was noted in 3 of the anencephalics.

Associated anomalies occurred rather infrequently. Osteogenesis imperfecta was noted in 3; 2 had atypical hyperplasia of the fetal cortex of the adrenal, and 2 had congenital heart disease.

It is well known that surgical repair of meningoceles or meningomyeloceles may be followed by profound neurological disturbances, including paralysis of the lower extremities, or may result in the subsequent development of hydrocephalus due to the Arnold-Chiari malformation. This malformation interferes with flow of spinal fluid by jamming the brain stem into the foramen magnum, and this may cause hydrocephalus.

MISCELLANEOUS

Miscellaneous anomalies encountered were 2 osteogenesis imperfecta, 1 chondrodystrophy, 1 hypoplasia of mandible with absence of the labyrinth, 1 absence of left radius, 2 talipes equinovarus, 1 bilateral cleft palate and harelip, 1 extrophy of the heart and lungs with bilateral harelip, 1 cervical hygroma, and 1 hyperplasia of thyroid with compression of trachea. Four teratomata were observed. These are found most frequently at either end of the cerebrospinal axis. Sacrococcygeal teratomata usually lend themselves to surgical correction. Anatomically it is situated behind the rectum and anterior to the sacrum. The mass appears over the lower spine and is covered with normal skin. Most of these teratomata are benign, but may undergo malignant change, especially after the age of four months.[19] Surgical excision with due care to preserve the rectal sphincter is indicated. Occasionally it is necessary to differentiate sacrococcygeal teratomata from spina bifida with meningocele.

In this series there was 1 sacrococcygeal teratoma, 2 teratomata of the thymus, and 1 of the thyroid. One teratoma of the thymus and one teratoma of the thyroid occurred in infants born to mothers whose pregnancy was complicated by polyhydramnios. These tumors were large enough to compress the tracheal airway and result in strangulation of the infant. In an additional case, thyroid hyperplasia of a sufficient degree to compress the trachea occurred.

SUMMARY AND CONCLUSIONS

We have analyzed briefly from a study of a large group of autopsies the more important anomalies that may be encountered in early infancy. Many of these patients (23 per cent) had multiple anomalies, any one of which could have been fatal. However, in clinical practice one finds a surprisingly large number of infants with a single anomaly which might be corrected if the diagnosis is promptly made.

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FREQUENTLY UNRECOGNIZED MANIFESTATIONS OF NASAL ALLERGY

JACK R. ANDERSON, M. D.
WALLACE RUBIN, M. D.
NEW ORLEANS

Despite the fact that about 75 per cent of chronic nasal disorders have some basis in allergy, the possibility of an allergic etiology in the treatment of nasal disease is still often ignored. This is probably due, in large part, to the fact that when confronted with nasal complaints, most physicians automatically think in terms of infection. In other words, the disorder is due to infection until proven otherwise, which generally consists of successfully withstanding several varieties of antibiotic bombardment or surgical procedures.

Since this is the state of affairs with regard to localized nasal disorders, it is not surprising that the allergic etiology is even more frequently overlooked in the fringe areas, i.e., in those conditions which occur in the ears, throat, larynx, and chest but which stem from nasal allergy. The purpose of this presentation is to call attention to some disturbances in these locations in the production of which nasal allergy often plays a significant role.

CONDITIONS OR FINDINGS REFERABLE TO THE NOSE ITSELF

1. *Recurrent or persistent colds.* Most of the patients with these complaints are under the impression that they are suffering from something which they vaguely describe as "sinus". Their history is that they seem to have "one cold right after another", they seem "to live with a cold", and once they catch cold, "it seems to hang on and on". Questioning will reveal that, in most instances, these conditions are not accompanied by the constitutional symptoms which usually occur with upper respiratory infections, the nasal mucosa is pale and the mucus contains a diagnostic amount of eosinophiles. We have often found that a bacterial allergy is the explanation for symptoms which persist long after the acute stage of a cold has passed. These remarks should not be construed to mean that allergic patients do not have more true upper respiratory infections than those without allergy; what we mean is that upper respiratory allergic crises are often mistaken for infection.

2. *"The allergic salute"*, frequent "hawking", or clearing of the nose and "sniffing". The "allergic salute" is the descriptive term often applied to a gesture frequently used by allergic children. This consists of a frequent rubbing of the tip of the nose with the hands because of the itching due to allergy. We have had to assure a number of mothers that this was not a sign of a parasitic infestation. Undoubtedly, everyone has had the misfortune to sit next to someone in a movie

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or in church who was constantly "hawking" or pulling the mucus from his nose back into the nasopharynx and frequently expectorating into a handkerchief or tissue. These individuals do this so much that they usually equip themselves with several handkerchiefs each morning to handle the tremendous amount of mucus they obtain over the period of a day. When examined, these secretions are usually clear and do not contain much more than eosinophiles. In some patients the production of mucus is not so pronounced and the blockage is predominant; these people "sniff" frequently without expectorating.

3. *The adenoid facies.* This is purposefully mentioned before the problem of enlarged adenoids is considered because the typical long face and tendency to mouth breathing may occur as a result of chronic nasal blockage as well as because of enlarged adenoids.

4. *Nasal polyps.* Practically everyone knows that most cases of nasal polyposis are due to allergy and the condition is often very easy to diagnose. In some instances of nasal blockage, however, polyps occurring in portions of the superior meatus or in the posterior third or half of the nose may be overlooked unless thorough shrinkage of the nasal mucosa is carried out.

5. *Ethmoiditis.* It is not unusual to encounter a low grade ethmoid infection accompanying allergic rhinitis. Quite often this infection will defy all efforts made to control the allergy and dramatic relief ensues when the ethmoiditis is treated. This is mentioned here because the condition is often present in spite of negative x-rays.

6. *Headaches.* Recurrent headaches are frequently of allergic origin. Our observations indicate that they occur most often in individuals who have associated deviations of the nasal septum causing impaction, or in those cases whose turbinates are impacted against the lateral wall of the nose. Diagnosis can be established rather easily by field block anesthesia if the patient is seen while suffering with the headache. They can be controlled either by proper allergic management or by indicated surgical procedures; the latter will not, of course, cure the allergy but the allergic edema will be able to be accomodated without setting up a pain reflex.

7. *Enlarged adenoids.* As is well known, lymphoid hyperplasia and the allergic diathesis go hand in hand. What is frequently overlooked is the fact that there may be a "regrowth" of tissue following adenoidectomy if nasal allergy is uncontrolled. There is another reason to keep this phenomenon in mind. Hyperplastic changes may have become so pronounced that even though some recession may follow allergic control the remaining tissue still may be large enough to cause nasopharyngeal blockage and make the allergic management of the patient appear to be unsatisfactory.

CONDITIONS OR FINDINGS REFERABLE TO THE EAR

1. *Secretory otitis.* This entity occurs more frequently than is generally thought. It consists of the presence of nonpurulent secretion in the middle ear cavity and is due to Eustachian tube blockage, due either to enlarged adenoids or edema of the walls of the tube. It results in varying degrees of conductive hearing loss and sometimes tinnitus and/or vertigo. If untreated, organization of the serous material may ensue and lead to irreversible loss of hearing.

2. *Recurrent ear pain.* It is not unusual to encounter patients who complain of intermittent attacks of ear pain of short duration. These attacks are generally due to short periods of Eustachian tube blockage and respond nicely to the use of antihistaminics and nose drops in the Parkinson position. If refractive to this therapy, allergic management is indicated.

3. *Persistent drainage of the ear.* Persistent drainage following tympanotomy or spontaneous rupture of the tympanic membrane in otitis media should cause one to consider the presence of a nasal or Eustachian tube allergy. The secretions are either mucopurulent or entirely mucoid. It is not enough to treat the infec-

tion in these cases; the primary allergy should also receive attention and this approach is sometimes rewarded with quick success in cases which have been refractory prior to the institution of allergic management.

4. *Recurrent otitis media.* There are a number of factors of importance in the production of otitis media. However, it has been our experience that many of the individuals who have recurrent attacks of this condition have a nasal allergy. As a result of nasal blockage due to the allergy and sometimes enlargement of the adenoids, there is stagnation of the secretion in the nasal passage, infection travels along the Eustachian tube and the otitis media develops. There is often an accompanying ethmoiditis.

5., 6. and 7. *Hearing loss, vertigo and tinnitus.* As intimated previously nasal allergy may cause hearing loss as a result of either hyperplasia of the nasopharyngeal lymphoid elements or as a result of involvement of the Eustachian tubes in the allergic process. In each instance the condition is reversible provided tissue changes have not proceeded too far. Nasal allergy may cause vertigo and tinnitus by the same mechanism.

8. *Speech difficulties in children.* Because we first learn speech by virtue of hearing it spoken it is evident that certain speech disorders in children are due to the fact that they have a hearing loss. As mentioned above, allergy may be the cause of hearing loss and so indirectly of speech disorders.

CONDITIONS REFERABLE TO THE THROAT

1. *Recurrent sore throat* (particularly in the morning). There is one type of sore throat which occurs very frequently in allergic patients. They complain of recurrent sore throat which is present on awakening in the morning but which disappears as the day progresses. Sometimes the soreness returns when evening falls. Quite often a history is given of the necessity for expectoration of a large amount of mucoid material shortly after arising. The sore throat is due to the fact that these individuals suffer with nasal blockage while sleeping and so breathe with their mouths open all night. This dries the membranes of the mouth and pharynx and gives rise to the soreness. After awakening the mucus again begins to flow down from the nose into the pharynx and the latter is lubricated, as it were; this is the reason the sore throat disappears as the day wears on.

2. *Postnasal discharge.* The patient becomes aware of the mucus travelling down from the nose into the throat when it is excessive in amount or when it is too viscid. In the case of allergy, of course, excessive production is the explanation. It is well to consider allergy as an etiologic factor in the production of postnasal discharge because too often an infected sinus is indicated.

3. *Lymphoid accumulations in the oropharynx.* The discrete lymph follicles on the posterior pharyngeal wall and the lateral accumulations known as the lateral pharyngeal bands are more often than not an indication of the presence of a nasal allergy. In addition to being characteristic of the allergic constitution, they seem particularly large when there is an allergic postnasal discharge, as though they might be in response to it.

4. *Morning clearing of the nose and throat.* This is quite a common complaint of those suffering from nasal allergy. Some of these individuals make such strenuous efforts to rid themselves of their secretions that they become nauseated and even actually vomit. The annoying secretions probably are of two types and stem from two sources. First, there are those which pool in the nasopharynx overnight. Then there are the viscid pharyngeal secretions which result from mouth breathing.

CONDITIONS REFERABLE TO THE LARYNX

1. *Frequent clearing of the vocal cords.* The accumulation of secretions in the hypopharynx as a result of nasal allergy often serves to irritate the superior laryngeal nerves, the so-called "watch dogs of the larynx". The patient often responds

to this by constantly "clearing his throat." What he should really do is swallow the secretions.

2. *Hoarseness.* When the clearing of the vocal cords mentioned above continues for a long enough time the vocal cords become edematous and thickened. The result is various degrees of hoarseness.

3. *Vocal nodules.* In some instances the constant trauma to the vocal cords results in the formation of angiomatous polyps on the cords. These are commonly known as vocal nodules.

4. *Voice aberrations.* Should the trauma continue long enough the individual may try to overcome the vocal cord abnormality by speaking in a register which is either too high or too low. This often results in laryngeal strain and fatigue.

CONDITIONS REFERABLE TO THE CHEST

1. *Cough.* Though cough is most often thought of as an indication of a chest disorder there is one type which is often associated with the postnasal discharge nasal allergy. This is a "dry" or "tight" type cough. It may be present during the day but one of its characteristics is that it more often begins as soon as the patient retires. They frequently complain that it is due to an itching or tickling in the throat. Apparently here too superior laryngeal irritation is one mechanism in the production of this type of cough.

2. *"Asthmatic bronchitis."* This is enclosed in quotation marks because some object to the nomenclature. The symptoms are obviously due to the passage of air over mucus in the hypopharynx, larynx, and trachea. Undoubtedly some of the mucus originates in the nose but some must also be produced locally in the trachea. It is mentioned in connection with nasal allergy because the symptoms will often be dramatically relieved by displacement lavage of the ethmoids when there is superimposed infection.

GENERAL CONDITIONS REFERABLE TO NASAL ALLERGY

1. *Irritability.* Most individuals with nasal allergy will declare that when there is blockage of the nasal passages due to an allergic crisis they are more irritable than usual. This would not seem difficult to understand if we but recall our own emotions when our heads are blocked as a result of acute coryza.

2. *Behavior problems.* Behavior problems in children may stem indirectly from a nasal allergy, particularly if the hearing is involved. The mechanism is not difficult to understand. These hard of hearing children feel left out of things and often have difficulty in understanding and so may not keep up with others in school work. Sometimes they are actually thought dull. As a result they attempt to compensate by calling attention to themselves. Unfortunately in so doing they often run afoul of the behavior code.

3. *Tiredness.* Allergic patients, including nasal allergics, claim that they fatigue more easily than do other patients. This is not surprising as allergy implies anoxia and it is well known that the anoxic organism does not work with the same efficiency and tires much easier than the normal one.

SUMMARY

1. A number of conditions often found in conjunction with nasal allergy are briefly discussed.

2. The mode of action of these conditions is discussed.

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OCULAR MANIFESTATIONS OF VASCULAR DISEASE *

GUSTAV C. BAHN, M. D. †
NEW ORLEANS

Perhaps the quickest, easiest, and most valuable procedure that we have at our disposal for evaluating the general status of a patient's vascular tree is ophthalmoscopy—and yet, it is often amazing that so little advantage is taken of this diagnostic technique. Nowhere else in the body are vessels and vascular changes so amenable to direct observation. Unfortunately

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† From the Department of Ophthalmology, Tulane University of Louisiana, School of Medicine, New Orleans 12, La.

however, over the years, many—perhaps too many—classifications of eyeground changes have accumulated and come to clutter up the literature. Contradictory observations and lack of objectivity in the organization of many of these classifications have served only to confuse the basic issue of understanding and interpreting pathologic processes. As with the grain of truth, there is, however, something to be said in favor of most retinopathy classifications—in some, simplicity and practical usefulness—in others, completeness—even if to the point of bulkiness and over classification. A defect which limits any such method of examination and classification is reliance upon visual memory—the human factor—and this cannot be eliminated.

In recent years, cognizance has been taken of the fact that the eyeground is not a thing apart from the rest of the body. Retinal vascular changes have been objectively integrated into the general medical, vascular and pathologic picture.[1-3] As a result, we have now classifications which are simple, workable, and most importantly, clinically useful.

Out of the many attempts to categorize fundus changes and pictures have evolved a number of important concepts. First, a close relationship between eyeground findings and pathologic changes both in the eye and elsewhere in the body has been established. As a result of this, correlation between ocular and systemic physiopathology can be recognized. Clinical ocular changes have come to be accepted as a reflection and a part of similar processes elsewhere in the body. We can say, upon fundus examination, that this patient has hypertension alone, or that one has diabetes without sclerosis, or another is undergoing sclerotic changes — and estimate the severity,[4, 5] duration [6] and prognosis [7, 8] in many cases.

Fundamentally, the vascular changes seen in the fundus of the vascular patient —and here we are also considering the diabetic patient — are relatively few in number. For all practical purposes there are but three parts of the vascular tree—the arterial limb, the capillary bed, and the venous limb. In the fundus, of course, only the peripheral portion of the tree is seen—the arterioles, capillaries and venules. It is in this portion of the vascular system that pathologic changes occur earliest, and therefore, here that one should look first. Bell [9] has recognized six types of arteriosclerosis. These include regenerative arterial thickening, elastic intimal thickening, intimal atherosclerosis, arteriolosclerosis, senile ectasia and the medial sclerosis of Monckeberg. Of these six, the first four occur in the eye, three in the central retinal artery and its main branches, and the fourth after the second bifurcation of the central retinal artery. The central retinal artery becomes arteriolar after its second bifurcation when it loses its internal elastic lamina and muscular coat. This is a pathologic classification, however, and only parts of it are useful clinically, since the line of distinction between the different classes is sometimes rather finely drawn.

HYPERTENSION

Hypertension is essentially a dynamic physiopathologic process rather, at least in its beginning—than a static anatomic one. The changes in the eyeground that one might expect to see would therefore vary with the degree of hypertension on the basis of time—from moment to moment. An abrupt increase in blood pressure, such as occurs in toxemia of pregnancy, is accompanied by characteristic retinal changes.[10] A sudden fall in blood pressure of these patients is followed by a return to normalcy provided the hypertensive state has not persisted for any length of time. The fundus is completely normal with no residua or sequaelae. These changes then, are transitory—transient narrowing of the arterioles, transient hemorrhages and transient papilloedema. The constricted or spastic segments of the retinal arterioles may be seen moving along the blood column—or may disappear as a result of relaxation of vessel wall. Should the pressure be very high, and the

vessel wall not be able to withstand this trauma, the wall is damaged, leaks—and hemorrhages are seen. These hemorrhages assume the well known flame shape, because they occur in the nerve fibre layer of the retina and the blood following the path of least resistance spreads out along the course of these fibers. Should the hemorrhages occur deeply in the retina, they tend to be more rounded in shape. Finally, if the blood pressure is very high, and remains so for any length of time, "exudates" make their appearance. Fresh exudates, the so-called "cotton wool patches," represent focal areas of retinal degeneration or ganglioform degeneration and accumulations of fibrin. The hard shiny exudates of long standing hypertensive disease are composed of lipid deposits. The most severe form of hypertension—malignant hypertension — is accompanied by swelling of the optic nerve head or papilloedema in addition to the above findings.

This material then provides the basis for a scheme of classifying hypertensive retinopathy. Scheie,[11] simplifying and condensing and making more universally workable the Keith-Wagener and Wagener-Clay-Gipner [12] classifications, has proposed the following grouping of hypertensive retinopathies.

Grade I: Mild hypertensives, who present just recognizable vessel narrowing or spasm.

Grade II: Pronounced narrowing of the vessel with localized irregularities, indicating focal spasm.

Grade III: Extreme narrowing and irregularity with edema or edema residues.

Grade IV: All of the findings of grade three plus papilloedema.

This classification correlates well with the severity of the hypertension. Another scheme is used to estimate vascular damage and duration through the evaluation of accompanying sclerotic changes.

VASCULAR SCLEROSIS

The relationship between hypertension and vascular sclerosis is not clearly understood, although a close connection must certainly exist. Young patients with essential hypertension of long standing do develop retinal, renal, cerebral and coronary vascular disease much earlier than do nonhypertensives of the same age. Heredity, age, and lipid metabolism are important in the long term development of vascular degeneration, but blood pressure levels apparently play a dominant role in the relatively short term picture. Certainly, arteriosclerosis is aggravated and accelerated by the presence of hypertension. As hypertensive vascular spasm persists, regardless of whether the spasm is on a neural or humoral basis, hyaline deposits and lipid material is laid down just outside the arteriolar endothelium. This then is responsible for thickening and eventual opacification of the arteriolar wall. This process tends to be diffuse in distribution in contrast to atherosclerosis which is prone to develop as focal subintimal plaques—in true arteries.

The diagnosis of atherosclerosis can be made in the fundus only if the central retinal artery or its first two branches are involved. In such cases the vessel wall presents focal areas of opacification with localized narrowing of the blood stream. More often, atherosclerosis is diagnosed by implication—a vascular accident involving the central retinal or some other branch of the internal carotid artery. Occlusive phenomena of the central retinal artery, or the vein as a result of pressure by the artery is a dramatic event, and the diagnosis is not likely to be easily missed.

Arteriolosclerosis and capillary sclerosis are for all practical purposes the only general degenerative vascular process that can be seen ophthalmoscopically. The central retinal artery has become an arteriole after its first or second bifurcation, and the other five forms of senile sclerosis mentioned by Bell occur only in true arteries.

Arteriolosclerosis is a diffuse affair in contrast to atherosclerosis which tends to be spotty in distribution. In the fundus, simple arteriolosclerosis is manifest by changes which are fairly characteristic:

As the vessel wall becomes thickened and more opaque, the light from an ophthalmoscope, incident upon its surface is more completely reflected—and the light streak becomes broader. Eventually, the streak covers the entire surface of the vessel which then has a copper wire appearance. The blood column is partially obscured by the semi-opaque vessel wall. Finally the vessel wall becomes completely opaque by further hyaline and lipid deposition, and the vessel assumes the well known silver wire appearance. Blood, though not seen, may still course through the lumen of such a vessel.

The second group of ophthalmoscopically characteristic changes of arteriolosclerosis occur at the arteriovenous crossings. To understand these changes, one must remember that the artery lies on the vein, the arterial wall is considerably thicker than the venular wall and that the two vessels as they cross, share a common adventitial sheath. Normally, no pressure is exerted by the artery on the vein, and venous return is unimpeded. As the arteriolar wall becomes thicker and more rigid, it compresses or indents the underlying venule, giving rise to the commonest change seen ophthalmoscopically. Extension of the sclerosis to the common adventitial sheath causes the blood column in the vein on either side of the crossing to be partially obscured, and the vein at these points appears "tapered." If the blood flow is appreciably impaired, the vein distal to the crossing may become distended. This is spoken of as "banking of the vein," or Gunn's sign.

The third manifestation of arteriolosclerosis is increasing vascular tortuosity. Retinal vessels, especially the veins, may normally be rather tortuous, so this finding alone is not significant. Hemorrhages and exudates are not usually a part of the picture of simple arteriolosclerosis—in the absence of hypertension, unless a complete or branch venous obstruction has occurred.

The classification of arteriolosclerosis which has been suggested by Sheie is based primarily upon light reflex changes rather than the events that occur at the arteriovenous crossing. This classification is, however, simple, accurate, and easy to use.

Grade I arteriolosclerosis is present if there is a just recognizable increase in the breadth of the light reflex associated with minimal arteriovenous compression.

Grade II is diagnosed if the findings of Grade I are more marked.

Grade III is present if the arterioles have a burnished copper wire appearance and marked arteriovenous compression.

Grade IV is indicated by the presence of silver wire arteries.

Obviously, any combination of the various degrees of hypertension and arteriolosclerotic retinopathy can occur simultaneously, but each can be separately graded.

DIABETES

Diabetic retinopathy is included in this discussion for two reasons: First, the diabetic retinal changes are exclusively vascular, and second, because of the increasing incidence and importance of this clinical picture. The degenerative complications of diabetes are increasing because of the increased life expectancy among diabetics since the advent of insulin. This is particularly true in the case of young diabetics, whose disease usually takes a more severe form. The fairly recent work of Ballantyne,[13] Ashton [14] and Friedenwald [15] have wrought rather radical changes in the medical world's concept of diabetic retinopathy. All of the medical texts prior to 1950 describe the characteristic fundus changes of diabetes as consisting of small punctate hemorrhages, exudates and, if the diabetes was of moderate duration—arteriosclerosis. The ophthalmoscopic picture is characteristic—but the characters have been misnamed. It is now known that the so-called petechial hemorrhages are not hemorrhages at all, but in reality, minute aneurysms of the capillary wall on the venous side of the capillary bed. These aneurysms average 20 to 30 micra in diameter, and, being at the very limit of ophthalmoscopic visibility, are very prone to be missed in a casual

fundus study. They appear as small dark red pin-point structures bulging from the capillary wall, and lie at the point of bifurcation of the capillary in the saddle between the two branches or on the outer convex surface of a sharp capillary bend. These globular masses lie immediately adjacent to the capillary and are not connected by a stalk. The most important clinical feature of these aneurysms, and one that facilitates differentiating them from true petechial hemorrhages lies in the fact that they remain present for weeks, months, or longer. Retinal hemorrhages can and do absorb in a matter of days. It is extremely difficult to remember or to describe in words the exact location of these lesions for the purpose of recording course and change. A graphic or diagrammatic sketch of the fundus showing the number and location of these aneurysms is highly advisable, and is the most accurate method of keeping track of the ophthalmoscopic picture.

As these aneurysms grow older, their walls gradually become hyalinized and thickened, and eventually, the blood which they contain becomes obscured, and only the white or waxy wall is seen with the ophthalmoscope. The aneurysm has then become an exudate.

The newly recognized aneurysms and exudates are typically found in the posterior temporal portion of the fundus, especially around the macular region. As the exudates increase in number surrounding the macular area, they form a ring, and present the picture of circinate retinitis.

The larger veins of the retina in diabetes become more full, and have the appearance of swollen sausages. The late picture of diabetes consists of extensive hemorrhages, massive exudation, new vessel formation, and the so-called retinitis proliferans. Daeschner, Disher and Hartman [16] have presented the following quantitative classification of diabetic retinopathy:

Grade I: 1 to 20 microaneurysms and/or 1 to 10 exudates per fundus.

Grade II: Moderate retinopathy: 20 or more aneurysms, the presence of retinal hemorrhages and/or 10 or more exudates per fundus.

Grade III: Advanced retinopathy: The findings of Grade II plus the presence of new capillaries, retinitis proliferans and its complications.

Lipemia retinalis is sometimes a part of the picture of diabetes in young individuals whose blood lipoid content rises to 4 or 5 per cent.[17, 18] These diabetics are usually poorly controlled. The retinal vessels have a creamy appearance, and it may be difficult to differentiate the arterioles from the venules on the basis of their color.

A most important point to remember in evaluating the fundus of a diabetic is that the retinopathy is a much more important index of the duration of the disease than of its severity. No diabetic is ever quite perfectly controlled. Normalization of the blood sugar level with insulin does not necessarily mean normalization of the patient, because of the antagonistic relationship between the pancreas and the pituitary gland. Patients with apparently stabilized diabetes—normal routine urinalyses, weight stabilization and so forth, very frequently develop retinopathy as they grow older.

In conclusion, I should like to re-emphasize the usefulness and value of careful ophthalmoscopic examinations, and their importance in assessing general vascular pathology. The duration and amount of damage produced by hypertension can be fairly accurately determined ophthalmoscopically. The degree of arteriolar sclerosis in the retinal vessels mirrors renal damage of a similar type. Estimation of the duration of a diabetic state can be made with reasonable certainty through ophthalmoscopy.

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PSYCHIATRIC EMERGENCIES IN GENERAL PRACTICE *

ROBERT A. MATTHEWS, M. D. †
NEW ORLEANS

INTRODUCTION

It is generally recognized that psychiatric emergencies do occasionally arise in the field of general medical practice. The frequency of such emergencies and their nature is not so clearly understood. Often the general practitioner thinks of a psychiatric emergency as being represented by an acutely excited patient, who requires immediate commitment to a mental hospital. Such patients constitute a very small percentage of the individuals coming under the category to be covered in this paper since such emergencies arise in all psychiatric categories. We see emergencies arising in the psychoneuroses, in the psychoses, in the personality pattern disorders (the psychopath), in epileptics, in constitutional defect states (the feebleminded), and there are even psychiatric emergencies in the field of psychosomatic disorders. The early recognition of these conditions is vital if prolonged morbidity or even death is to be avoided.

A thumbnail sketch of a number of patients representative of the categories mentioned may be the most effective method of developing this theme. Since the general practitioner may wonder how a psychiatric emergency can occur in the field of the psychoneuroses, the following case can be cited as an example.

PSYCHONEUROSES

An active, competent, 39 year old physician practiced in a small city. He was interested in church and civic affairs and was looked upon as a respectable, exemplary citizen. One morning about four, he awoke with a sense of impending disaster accompanied by pain at the apex of the heart, palpitation, marked tachycardia, shortness of breath followed by nausea and diarrhea, cold clammy extremities, and an all-gone feeling. A coronary occlusion was suspected. The usual immediate treatment was given. The next morning an electrocardiogram was made, which proved to be normal. Later that day the patient had a similar but milder episode. These were the first of numerous similar attacks so that soon the patient became convinced that he had some type of organic heart disease. Over a period of time numerous electrocardiograms were made all with normal tracings. He soon became a "cardiac cripple".

The patient's local physician, a friend, considered the possibility of an emotional disturbance and had inquired as to whether or not he had been under any special strain or was worried about anything. This the patient vehemently denied, insisting that he had nothing to worry about. He pointed out that at the onset of his

* Presented at the Seventy-fourth Annual Meeting of the Louisiana State Medical Society, May 21, 1954, in New Orleans.

† Professor of Psychiatry, and Head, Department of Psychiatry and Neurology, Louisiana State University School of Medicine, New Orleans, Louisiana.

illness he had just returned from a month's vacation with his wife and family and that he had never been so happy or rested. He was sure that there could not be anything in his life that could account for his trouble. Furthermore, his first attack had occurred during the night and he had been awakened by the symptoms. Ultimately, he consulted a prominent heart specialist, who, in spite of the patient's denial of emotional conflicts, decided that the psychiatric aspects of the problem should be investigated. When seen in consultation, the patient appeared to be tense, anxious, and seemed somewhat evasive. He gave a routine history and again protested that he had no troubles other than those incident to his illness. Suspecting that there must be some conflictual material which he was not willing to reveal, a second interview was arranged, and this time the significant facts were revealed. In short, the patient was married to a rigid, frigid wife, who was a member of the WTCU, and who would not permit him to take even a drink of beer. On the surface she was the loving wife, the devoted mother of their two children, and the excellent housekeeper. Actually, she lacked real warmth and was emotionally unrelated. In due time the patient developed a friendship with a young woman who became his mistress. The affair advanced to the point where something had to be done. He felt that he had either to break up his house or break off the affair. He chose the latter course. The woman moved to another city and he took a vacation with his family. He felt virtuous, but frustrated. Upon return home he received a letter from the girl in question telling him that she was going to visit their home town for a few days. Would he see her again? It was at 4:00 the next morning that he awoke with his first anxiety attack.

Can this be considered a psychiatric emergency? Yes, because this man was rapidly becoming a chronic, confirmed "cardiac cripple" on the basis of an "organ neurosis." He had had months of partial disability. The underlying and most significant ideological factors in his case had not been unearthed nor had they been dealt with in any fashion. This was not entirely the fault of the family doctor. He had inquired about emotional difficulties, but he was too close to the patient. We often speak about the tremendous value of that intimate relationship between family doctor and family, but sometimes it is too close. Sometimes it blocks communication so that the patient must go elsewhere, must go to another city, must go to a consultant, who does not belong to the same country club, who does not attend the same church, who does not go to the same Kiwanis Club meeting. The patient often cannot communicate comfortably with the person who is too closely associated with him but he must communicate to get well, so this is a medical emergency.

There are other psychiatric emergencies in the field of the psychoneuroses. For example, a 26 year old young woman suddenly developed a state of panic while walking along a street. She had to rush home and thereafter could not leave the house unaccompanied. In addition, she developed a wealth of psychosomatic complaints including gastrointestinal disturbances, cardiac arrhythmias, and other symptoms which her family physician recognized as being due to "nervousness". He tried to work out the problem but he could not quite get to the root of the situation. After more than two years of disability she was referred for treatment of the emotional aspects of the illness. It was found that the patient had strong dependency needs linked with great hostility and guilt, a triad which is present in the background of most emotional problems. It was significant that the patient's first state of panic occurred while walking on the street with her mother-in-law, whom she hated. The mother-in-law had been goading her into an activity she detested so that the hostility which she feared reached the boiling point and panic ensued.

After a period of psychotherapy, the patient began to be able to verbalize her feelings. On one occasion during an interview, she suddenly got up from her chair, left the room and did not return for about fifteen minutes, then stating "I feel so much better". When an inquiry was made as to the reasons for her behavior, she explained that she had gone to a telephone, called her mother-in-law, told her to go to hell, to get out of her house and that she never wished to see her again. For the first time this young woman was able to express overt aggression and feel safe in doing so. The patient recovered. She was not as sweet a person after treatment as before but a much healthier one. Had the first panic state been looked upon as a psychiatric emergency in this case, several years of morbidity could have been avoided.

Emergencies, of course, are seen in the psychotic reactions. The acutely, excited, assaultive, threatening patient must be cared for. But less obvious reactions are also emergencies that are sometimes overlooked. As an example—a young married woman rudely awakened her husband one night by striking him vigorously over the head with a shoe. She was unable to give any satisfactory explanation for this and merely said that she must have done it in her sleep. The episode was dismissed as without significance at the time. A short time later she seriously beat her two year old child, attacked her mother with a lethal weapon and destroyed considerable property. Such impulsive behavior as the first episode occurring without provocation must never be ignored. If tragedies are to be avoided, such cases must be considered psychiatric emergencies.

There is increasing evidence that unless emotional disturbances are treated at an early stage, a neurophysiological pattern may be established which becomes increasingly difficult to eradicate. Instead of weeks of therapy, months and years of treatment may be required. The neurophysiologists are now speaking about reverberating circuits and feedback mechanisms in the central nervous system indicating that their establishment may account for perpetration of neurotic patterns of behavior. As time goes on, weaker and weaker stimuli may set the reaction in motion.

AFFECTIVE OR MOOD REACTIONS

In the group of so-called affective or mood reactions, problem cases frequently arise. Once a 20 year old boy who for some time had been depressed and retarded, burst into my office and announced that he had only twenty minutes to give me. He had hired a taxi cab for the day to expedite a full itinerary. He had planned to have an interview with the Dean of a medical school to apply for admission. Following that he expected to enroll in a famous institute of music, then anticipated renting a hotel room with a piano so that he could practice all night in preparation for an audition in New York. The family doctor was called and informed of the emergency. It was suggested that the boy would soon run out of funds and could be apprehended when he failed to pay the taxi bill thus providing a convenient method for hospitalization. In a little while the family doctor got in touch with me to report that the relatives were indignant and would not consider following my suggestions because it seemed to them that the patient had not been as well or in such good spirits in months. They even indicated that they considered the psychiatrist a bit crazy. As for the patient, he did most of the things that he said he was going to do. Obviously he was not very successful in enrolling in the educational institutions but he did practice on the piano all night, he did go to New York, and he did have an audition. However, by that time he had become so excited, he was picked up by the police and sent to the Bellevue Hospital. Much trouble and expense might have been avoided had we been foresighted enough to have considered this case an emergency and to have informed the family in advance regarding the possible course of events. It might be appropriate

to mention here that in the field of mental illness, we are still met with the age-old problem of hostility and shame felt by relatives, the public, the patient and even at times, the physician. For this reason there is a strong tendency to ignore or be blind to the obvious.

DEPRESSIVE STATES

Depressive states also create emergencies. Suicide is always a possibility. Too often threats of self-destruction are ignored. On the other hand they are sometimes overstressed. Only about one in ten suicidal attempts succeed and most of the others were intended to fail. Suicide, or the threat of self-destruction, is a hostile act directed against both self, and more often, others. An individual can punish the erring spouse, the rejecting mother, the authoritarian father by saying you do not appreciate me. I will die. Look what you have done to me. This is well expressed in a little ditty:

"You're always, always picking on me
You never, never let me be.
I know what I'll do by and by
I'll eat some worms and then I'll die
And when I'm dead, you wait and see
You'll all be sorry that you picked on me."

Not so long ago we had a wonderful prophylaxis for suicide. It was tincture of iodine and there was a bottle on every bathroom shelf. The bottle was marked with a skull and crossbones and the word "poison" printed beneath. The individual who impulsively wanted to commit suicide or thought he did rushed to the bathroom shelf and swallowed the contents of the bottle of iodine. Much was accomplished by this act. Everybody concerned was frightened and punished, aggression was acted out, guilt appeased and little harm done. At most the individual had a sore mouth and throat and there was at times vomiting and retching but the secondary gain was great. The individual was rushed to the hospital, given much attention, everybody involved was sorry and a reconciliation ensued. Unfortunately, iodine has lost its popularity and the more lethal barbiturates are the weapons of choice.

Nevertheless, it must be kept in mind that depressions with serious suicidal tendencies do not occur just in people who have psychotic depressive reactions. They occur in the neurotic who has failed, in the old person who is coming down the ladder, in the alcoholic after a binge.

Depressive episodes incident to the climacteric depressions are well known. Suicide also occurs in early schizophrenic patients, particularly in adolescence, when some insight is present and when the patient realizes with dread that he is losing his grip on reality. These are cases in which early treatment is most essential.

Suicide occurs in organic reactions where there is a threat to the physical and mental integrity of the individual. Head injury with memory loss is often too much for a person to bear. Old age has its contingency of suicides. A spouse dies. A symbiotic emotional relationship has broken up or the individual sees that he is losing his intellectual powers and he has lost the joy of productivity. The depressions of old age are not primarily organic in nature. They are psychological depressions incident to problems of adaptation. Threats of suicide in the aged are real psychiatric emergencies. Many old people respond promptly to electroshock therapy.

In psychopathic personalities with weak egos and strong instinctual drives which are not well held in check, serious problems frequently arise quite suddenly. Such persons cannot stand frustrations, may on slight provocation develop rage reactions, or when inhibitions are released by alcohol or barbiturates, a dangerous furor may ensue. Furor is also seen in epileptics. Such an individual is exceedingly dangerous.

PARANOID

One other psychiatric emergency that should be mentioned is the dangerous paranoid patient. This is more an emergency for the physician than for the patient because few of us wish to be shot. I refer chiefly to patients with physical complaints referrable to the rectum or the genitals, who demand treatment such as

local injections or operations. If such procedures are carried out they may be interpreted as sexual assaults. Retaliation is in order. Such procedures should be assiduously avoided. The risk is too great. Not long ago a physician was shot through the spine by just such a patient who believed that he had been mutilated by a rectal operation. Recently, a woman patient was seen whose chief complaint was throbbing in the genitals. She had seen numerous gynecologists who had wisely avoided physical treatment. Unfortunately, one physician told her that she needed an operation. Fortunately, he did not perform it but she was given some injections which made the throbbing worse. The implication is obvious.

SUMMARY

In summary, it can be said that psychiatric emergencies arise in general practice almost daily. Most of them the general practitioner is well equipped to meet himself. Others must be dealt with through the help of colleagues but they must all be handled just as one would handle any medical or surgical emergency. Often the need to treat these as quickly and as efficiently as surgical emergencies is not recognized. Unless this is done there may be loss of life; there is almost certain to be prolonged morbidity, needless expense will be incurred and the physician may invite assault upon himself.

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1430 Tulane Avenue

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OFFICERS OF THE LOUISIANA STATE MEDICAL SOCIETY 1955 - 1956

The officers of the Louisiana State Medical Society chosen for the years 1955-1956 are a credit to the judgment and ability of the House of Delegates that chose them.

The President is Dr. Max M. Green, a prominent urologist of New Orleans. Dr. Green has served capably and effectively in various capacities in the Orleans Parish Medical Society, of which he has been President, and on committees for the State Society. He brings to the highest position in the Society a comforting degree of discretion and experience, together with a capacity for decision. These qualities are greatly appreciated by the membership and provide confidence for the year.

The President-elect is Dr. Paul D. Abramson, a prominent surgeon of Shreveport, whose activities in the field of organized medicine have been fruitful in the Caddo Parish Medical Society, the Fourth District Medical Society, and in various committees on which he has served with the State Society. He has been Councilor from the 4th District for many years and will bring to the office of President next year a wealth of vision and organizing ability. The House of Delegates is to be congratulated upon this choice.

The First Vice President is Dr. George H. Hauser of New Orleans, who has long been prominent in the field of pathology and public health, and whose services in the cause of organized medicine have extended through many offices and committee chairmanships. As a private practitioner, an officer of the Board of Health, a teacher, and a friend, his elevation to the office of First Vice President is most fortunate for the Society, and he will in the future, as in the past, add valuable counsel to its deliberations.

The Second Vice President is Dr. H. H. Hardy, Jr., a surgeon of Alexandria, who has long been Councilor for the Eighth District. As a worker in the Rapides Parish Medical Society, and in the office of Councilor, and as Chairman of various committees, he has commended himself to the Society most creditably, and his elevation to the position of Vice President is most welcome.

The Third Vice President is Dr. J. Theo. Brierre, a prominent radiologist of New Orleans, whose services in the Orleans Parish Medical Society as Chairman of Arrangements for two annual meetings in New Orleans, and his activities in the State Society, have brought him many congratulations for his energy

and ability. The Executive Committee is most fortunate in having so valuable an addition to its deliberations.

The Past President, Dr. Walter Moss, retires to a position of comfort and security from which he will be able to render valuable advice and due caution. His year as President was a most active and successful one, and with his guidance the organization has been most happily directed.

The Chairman of the House of Delegates is again Dr. W. Robyn Hardy. Under his direction, the business deliberations of the Society have been conducted with fairness, caution, and dispatch. The Society is to be congratulated upon his choice and we congratulate him.

The Vice Chairman is Dr. O. B. Owens of Alexandria, whose work on behalf of organized medicine at the local level and at the State level is greatly to be commended. His knowledge in specialized fields will be invaluable in certain areas.

Dr. C. G. Cole continues as Secretary-Treasurer in the office he has held so capably and with such benefit to the Society. As in the past his experience, judgment, and discretion are invaluable in meeting the problems of the organization.

There are three changes on the Council: Dr. Ralph H. Riggs of Shreveport becomes Councilor for the Fourth District. He has served as Vice Chairman of the House of Delegates and as President of the Caddo Parish Medical Society. These together with other activities have made him most esteemed in the ranks of organized medicine. The Councilor for the Seventh District is Dr. J. Y. Garber of Lake Charles, who has most creditably discharged the functions of various offices in the Calcasieu Parish Medical Society, and whose activities in behalf of our organization have been unselfish and constructive. The Councilor for the Eighth District is Dr. R. E. C. Miller of Alexandria, who has been quite experienced in his work with the Rapides Parish Medical Society, and whose voice on the Council will be most valuable.

The activities and the responsibilities of the Louisiana State Medical Society are expanding each year. The organization, and therefore, its members have a great deal at stake. It is to the credit of our organization and the way in which it is administered that in a succession of years capable men have been found to serve its needs. We are most fortunate in having these men as our officers and Executive Committee for the coming year. The House of Delegates is again to be congratulated.

—o—

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

REPORT OF COMMITTEE ON RESOLUTIONS*

It is felt by the Committee on Resolutions that the 1955 Annual Meeting of the Louisiana State Medical Society held in New Orleans, May 2-4 has been an outstanding one and that this has been the result of efforts, cooperation and assistance of many individuals, groups and business firms.

THEREFORE BE IT RESOLVED that the Society express appreciation for assistance rendered by the following:

Dr. J. Theo Brierre, who has served as Chairman of the Committee on Arrangements and to personnel of all sub-committees on Arrangements.

All members of the Orleans Parish Medical Society—hosts to the Meeting.

Rabbi Nathaniel S. Share who delivered the invocation at the opening meeting of the Society.

Councilman Classen for words of welcome on behalf of the City of New Orleans.

* Adopted by House of Delegates at 1955 Annual Meeting.

Mr. Leo E. Brown, Director, Public Relations, A.M.A., for participation in program.

Dr. F. J. L. Blasingame, President of the Texas State Medical Association and trustee of the A.M.A. who served as annual orator for the meeting.

Dr. Roach who furnished to the House of Delegates information in re Salk vaccine.

Dr. Edgar Hull and Dr. Donovan C. Browne for expressions of welcome on behalf of Orleans Parish Medical Society and New Orleans Graduate Medical Assembly.

The following out-of-state guests who participated in the scientific program:

Dr. Vincent P. Collins, Houston, Texas; Dr. Vernon B. Link, Atlanta, Georgia; Dr. Louis S. Smith, Dallas, Texas; Dr. Morton J. Tendler, Memphis, Tennessee; Dr. Herman Yannet, Southbury, Connecticut.

Members of the Society who participated in the scientific program.

The New Orleans Chamber of Commerce for cooperation and assistance in many phases of the meeting.

The Times-Picayune, New Orleans States and New Orleans Item and newspapers throughout the state for news releases.

Local radio and TV stations for news broadcasts.

Scientific exhibitors.

Technical exhibitors.

Advertisers in program.

The Roosevelt Hotel, headquarters for the meeting, for excellent cooperation in handling hotel accommodations for members and guests and furnishing all requirements for scientific, business and social phases of the meeting.

Other hotels in New Orleans for accommodations furnished members.

Dr. Edwin H. Lawson, Secretary, Louisiana State Board of Medical Examiners, for his comprehensive report submitted to the House of Delegates.

Dr. Walter Moss, President of the Society.

Dr. C. Grenes Cole, Secretary-Treasurer.

Miss Annie Mae Shoemaker, Assistant Secretary-Treasurer, and the entire secretarial staff for assistance prior to and during the meeting.

Mrs. M. C. Wiginton, President, Woman's Auxiliary; Mrs. Edwin R. Guidry and Mrs. Paul G. Lacroix—Chairman of Arrangements for the Auxiliary Meeting.

Expressions of gratitude are also extended to Governor Robert F. Kennon for his continued cooperation in medical matters of interest to the members of the State Society during the past year.

Recommendation

1. It is recommended that a copy of these resolutions be sent to each person and organization mentioned and also published in the Journal of the Louisiana State Medical Society.

Respectfully submitted,
J. E. CLAYTON, M. D.
R. E. GILLASPIE, M. D.
M. C. WIGINTON, M. D.,
Chairman.

REPORT OF COMMITTEE ON MEDICAL DEFENSE †

Since report of this Committee to the 1954 meeting of the House of Delegates, six requests for defense in connection with malpractice suits have been received. It was agreed that all of the doctors requesting defense should be defended and the attorney for the Society was so informed.

Of these six cases, four have already been closed. One was voluntarily withdrawn on request of the plaintiff; one was dismissed by the court as a "nuisance" case; two were settled out of court by compromise, on the advice of the attorney; and two are still pending.

One case filed in 1952 was never prosecuted and has been dismissed. All other cases previously filed, and not reported completed, are at the present time waiting final action.

C. B. ERICKSON, M. D., Chairman

ABSTRACTED MINUTES HOUSE OF DELEGATES LOUISIANA STATE MEDICAL SOCIETY

May 2-4, 1955

Minutes

Minutes of the 1954 meeting of *House of Delegates* approved as recorded.

Minutes of meetings of *Executive Committee* since 1954 meeting of House of Delegates approved as recorded.

Special Order

Appointment of Committees: *Credentials*:—Dr. C. E. Boyd, Shreveport, Chairman; Drs. Richard L. Buck and J. Morgan Lyons, both of New Orleans. *President's Report*:—Dr. J. Kelly Stone, New Orleans, Chairman; Dr. Felix Planche, New Orleans; Dr. Arthur D. Long, Baton Rouge. *Resolutions*:—Dr. M. C. Wiginton, Hammond, Chairman; Dr. J. E. Clayton, Norco; Dr. R. E. Gillaspie, New Orleans.

Introduction and recognition of new members of the House of Delegates.

Roll of members who died since 1954 *Meeting* read.

Review of present status of Salk Vaccine by Dr. Roach of Eli Lilly and Company.

Greetings from the Southern Medical Association by Mr. C. P. Loranz, former Secretary-Manager.

Greetings from Dr. F. J. L. Blasingame, *President of Texas State Medical Association* and *Trus-*

† Accepted by the House of Delegates at 1955 Annual Meeting.

tee of American Medical Association.

Greetings from Mr. Leo Brown, *Director of Public Relations of the AMA.*

Greetings from representatives of the Woman's Auxiliary: Mrs. M. C. Wiginton, Immediate Past President, Louisiana State Auxiliary; Mrs. Spencer B. McNair, President, Orleans Parish Auxiliary; Mrs. Leo J. Schaefer, Immediate Past President, American Medical Association Auxiliary; Mrs. George D. Feldner, Immediate Past President, Southern Medical Association Auxiliary; Mrs. Edwin R. Guidry, Chairman of Arrangements for 1955 State Auxiliary meeting.

Announcement of Louisiana Rural Health Conference to be held in New Orleans, November 28-29; invitation extended to all members of the House.

Communications

Tangipahoa Parish Medical Society in re *Accreditation of Hospitals*: Resolution approved. (Copy under "resolutions").

Hoover Commission Report: Sample resolution approved. (Copy under "resolutions").

Action Taken

Recommendation of Executive Committee that *name of a doctor be listed in only one specialty*:—Recommendation to component societies that doctors be listed only as physician or surgeon and if specialist under only one specialty.

Hospital survey submitted by the East Baton Rouge Parish Medical Society and referred to the House of Delegates by the Executive Committee:—Referred back to the Executive Committee for further study.

Sample uniform claim insurance blanks submitted by Special Committee on Prepayment Insurance of the Council on Medical Service of the AMA:—Approved in principle.

Louisiana Physicians Service, Inc.:—Executive Committee authorized to take necessary steps to see that the papers of transfer of LPS are in proper order and the organization liquidated; notarized records of LPS to be sent to the office of the State Society.

Salk Vaccine—Recommendation that doctors undertake administration of polio vaccine for indigents not otherwise provided for—approved. Doctors to be allowed to say who is indigent and who is not as far as polio vaccine is concerned. Existing Committee on Gamma Globulin to supervise, at state level, distribution of polio vaccine and local societies be requested to appoint similar committees to act at parish level.

Reports without Recommendations

Following *reports accepted as printed*: Secretary-Treasurer; Council; Councilors, First, Second, Third, Fourth, Fifth, Sixth, Seventh, Eighth Districts; Committees: Advisory Committee to Selective Service, Aid to Indigent Members, Arrangements-1955 Annual Meeting, Blood Banks, Budget and Finance, Chronic Diseases, Committees, Congressional Matters, Evaluation Center for Exceptional Children, Geriatrics, History of Medicine in Louisiana, Hospitals, Journal, Lectures for Colored Physicians, Liaison with Louisiana State Nurses' Association, Malpractice Insurance Rates, Maternal Welfare, Mediation, Medical and Hospital Service in re Insurance Contracts, Medical Defense, Medical Education, Medical Testimony, National Emergency Medical Service, Public Health of the State of Louisiana, Public Policy and Legislation, Scientific Work, Second District Medical Society and Orleans Parish Medical Society, State Hospital Policies, Woman's Auxiliary.

Report of Committee on History of Medicine in Louisiana—discussed by Drs. Isidore Cohn and Arthur Vidrine.

Supplemental report of Committee on Medical and Hospital Service in re Insurance Contracts—Chairman reported action still pending.

Supplemental report of Committee on National Emergency Medical Service—Chairman read bulletin in regard to preparations, instructions, etc. for safety in event of an emergency.

Report of Council on Medical Service and Public Relations—accepted as printed.

Report of Louisiana State Board of Medical Examiners—accepted.

Reports with Recommendations

President: Referred to Committee on President's Report and report of this committee which recommended approval of recommendation No. 1, providing increase of dues will be turned into the general fund and not earmarked especially for the development of the public relations department; approval of recommendations No. 2, No. 4, No. 5 No. 6, No. 7, No. 8 and No. 9; and disapproval of recommendation No. 3; was accepted. These recommendations are as follows: 1. Increase dues ten dollars yearly to develop public relations department. 2. Increase dues five dollars yearly to establish a fund for a domicile. 3. Make provision for a ninth district if no major objection from members concerned. 4. Send copies of abstracted Minutes of House of Delegates to presidents of component societies for their information with suggestion that they be read to the members. 5. Encourage the practice of physicians insisting that prescriptions be filled at pharmacies of patient's own choice (a step forward in keeping peace and harmony resulting from personal communication with representatives of Louisiana Pharmaceutical Association). 6. Serious thought be given to the problem of integration. The Louisiana State Medical Society must be prepared for any eventuality. 7. Resolution to AMA with copies to other state societies, requesting medical schools to intensify medico-legal courses, with emphasis on medical testimony and prevention of malpractice cases. 8. President of each component society be urged to request a lawyer to address each society on malpractice prevention and medical

testimony once each year. 9. Programs related to School Health, Mental Health, Rural Health and Health Council work should continue to be of interest and concern to the physician and organized medicine.

Committee on Accreditation of Hospitals:—1. Committee be continued and allowed to present a full report at a later date—Approved. Resolution submitted and approved. (Copy under "resolutions").

Committee on Alcoholism:—1. The Louisiana State Medical Society go on record as recognizing that alcoholism is a disease which, in many instances, is amenable to treatment through physical and psychological means.—Not approved. 2. As a whole the Society give support to appropriate agencies interested in improving and expanding facilities for the care of alcoholics in Louisiana. —Not approved. 3. Support be given to the program for the care and treatment of indigent alcoholics being carried out at the New Orleans Charity Hospital, through the auspices of the State Board of Institutions, and at the Confederate Memorial Hospital, Shreveport, which programs are currently being supported by funds appropriated by the State Legislature.—Not approved. 4. Program in operation for treatment of indigent alcoholics (including a ten-bed in-patient service and an out-patient service at New Orleans Charity Hospital) be continued and that, if funds permit, the out-patient facilities in this area be increased in order that a greater number of acute alcoholics can be treated. —Not approved. 5. Comparable facilities be established in the Shreveport area. — Not approved. 6. Facilities for care of indigent alcoholics be developed in relation to other state hospitals. (Such a program has been started at the Huey P. Long Charity Hospital at Pineville.) — Not approved. 7. Program in operation at the Central Louisiana State Hospital for the longer-term care of indigent alcoholics be continued and expanded.—Not approved. 8. Since a large number of alcoholic patients are admitted and cared for at the East Louisiana State Hospital, plans now being developed for the establishment of a colony-type care for such patients at the institution be carried through to completion. (This program will include the active treatment of acute cases and a program to care for the longer-term cases which are not applicable for short-term therapies. It is proposed that one of the buildings in the farm colony at Jackson be set aside for this purpose, with a physician who has special interest in the care of alcoholics in charge.—Not approved. 9. The new mental health center in Lafayette, now being organized by the State Board of Institutions, through the superintendent of the Central Louisiana State Hospital, include a small in-patient service and extensive out-patient facilities as well as a program for the treatment of indigent alcoholics, in its plan.—Not approved. 10. When State Mental Hygiene Clinic facilities are expanded throughout the State, consideration be given to include in this program a plan to maintain out-patient facilities for indigent alcoholic patients.—Not approved. 11. The Society give support to worthy programs for the education of the public in matters pertaining to alcoholism, covering known facts and emphasizing prevention.—Approved. 12. Papers on various aspects of alcoholism be presented from time to time at parish medical society meetings and on the annual scientific program of the State Society.—Approved. 13. State Society continue to support suitable legislation for provision of funds for care and treatment of indigent alcoholic patients.—Not Approved.

Committee on American Medical Education Foundation:—1. Notify future chairmen of annual meetings for all state chairmen of the AMEF —Approved. 2. Furnish chairman for 1955-56 all available material both from the state and national level.—Approved. 3. Use a direct mail campaign to initiate the drive for funds and adopt the Ohio slogan: "Give either through your Alumni Fund or through AMEF—But Give".—Approved.

Cancer Commission:—1. Speakers for scientific programs of the State Society be secured through the Cancer Commission of the State Society and the Louisiana Division of the American Cancer Society.—Approved. 2. Parish and district societies be advised concerning availability of speakers and films on cancer; also concerning tumor conferences held at Tulane, LSU and elsewhere in the state.—Approved. 3. State Society go on record as supporting extension of the type of cancer registry which has been established in Charity Hospital in New Orleans and each hospital in the state be urged to consider the matter of establishing a cancer registry.—Approved. 4. Cancer Commission take initiative in establishing an unofficial Cancer Coordinating Committee to include representation of Louisiana State Medical Society Cancer Commission, Cancer Coordinator at Tulane University School of Medicine, Cancer Coordinator at Louisiana State University School of Medicine, a representative of the Louisiana State Department of Health and a medical representative of the American Cancer Society.—Approved. 5. Amount of $1,000.00 be budgeted for expense incident to activities of the Cancer Commission during 1955.—Referred to Committee on Budget and Finance; recommendation of Budget and Finance Committee that this amount be appropriated—Approved.

Committee on Child Health:—1. Express to Mr. Jackson, of the State Department of Education, a desire to cooperate with his department in regard to public school health programs whenever possible.—Approved. 2. Councilors of the State Society be requested to speak with members in their respective districts concerning endorsement of letters sent out by the State Society and the various parish societies, in regard to cooperation and

direction of local school health programs.—Approved. 3. State Society inform the Director of the Department of Institutions that the Society will be glad to cooperate and help in any manner possible when problems arise in regard to the medical care of inmates in any state institution.—Approved.

Committee on Diabetes:—1. Establishment of committees on diabetes in every parish and district society.—Approved. 2. Material published by American Diabetic Association furnished to parish and district society committees for use during Diabetes Detection Week.—Approved. 3. Encourage more talks on all phases of diabetes in local medical societies.—Approved. 4. Use facilities of Louisiana Diabetic Association and its members, as key workers, in the Diabetes Detection Drive.—Approved.

Committee on Domicile:—1. If dues are increased and certain amount earmarked for Domicile Fund, Committee be continued and instructed to further explore possibilities of securing a suitable permanent home.—Approved.

Committee on Federal Medical Services:—1. The State Society reiterate concurrence with recommendations of the House of Delegates of the AMA (as reported by the 1954 Committee), and the Secretary-Treasurer of the Society be instructed to inform the AMA of this action.—Approved. 2. Request, by letter, that local medical societies continue special committees to further these AMA and State Society principles and develop more interest in these problems.—Approved.

Committee on Gamma Globulin:—1. Should the Salk polio vaccine be declared, after a thorough study by the Poliomyelitis Vaccine Evaluation Center, to be safe and effective and is licensed by the National Institutes of Health, it is recommended that the members of the Society cooperate wholeheartedly with the State Department of Health in carrying out a program to vaccinate the first and second grade children of each public, private and parochial school of Louisiana, on a voluntary basis.—Approved.

Committee on Industrial Health:—1. State Society undertake a study of health as related to industry in Louisiana.—Not approved.

Committee on Medical Indigency:—1. Committee be continued.—Approved.

Committee on Mental Health:—1. The Committee on Mental Health be composed of members with overlapping terms.—Referred to Committee on Committees and recommendation of this Committee that the recommendation be disapproved, was accepted.

Committee on Neuropsychiatric Service at Charity Hospitals:—1. Return to the Coroner's Commitment as it was formerly used.—Approved.

Committee on Public Policy and Legislation (supplemental report):—1. Louisiana State Medical Society and Woman's Auxiliary of the State Society make application for membership in the Louisiana Organizations for State Legislation (LOSL).—Approved. Suggested resolution to AMA in re cult practice of medicine.—Approved. (Copy under "resolutions".)

Committee on Public Relations Counsel:—1. A lay assistant to the Secretary-Treasurer be appointed by the Secretary-Treasurer with approval of the Executive Committee. He shall also be dismissed, if the necessity arises, by the Secretary-Treasurer, with the approval of the Executive Committee. Such an individual shall not have authority to make policies and decisions for the Society. His salary shall be six thousand dollars ($6,000.00) per year.—Approved with deletion of last sentence. 2. Proposed budget incident to activity as planned with assistant to the Secretary-Treasurer.—The Committee on Budget and Finance recommended deletion of this proposal and this recommendation of the Budget and Finance Committee was approved. 3. Annual dues be increased from thirty-five ($35.00) to fifty dollars ($50.00) per year.—Referred to Committee on Budget and Finance and recommendation of this Committee that dues be increased from $35.00 to $50.00 was accepted. 4. Section 1 of Chapter XI of By-Laws be amended (to increase dues to $50.00, five dollars to be placed in a Domicile Fund)—Referred to Committee on Budget and Finance and recommendation of this Committee that the By-Laws be so amended, was accepted. (Copy of Section under "amendments"). 5. The Public Policy and Legislation Committee may secure other sources of help such as previously obtained, if it is impossible to employ a satisfactory fulltime assistant to the Secretary-Treasurer; subject to the approval of the Executive Committee. All other monies needed by this Committee shall be allotted by the Budget and Finance Committee with the approval of the Executive Committee and the House of Delegates, according to the Constitution and By-Laws.—Approved. 6. A sub-committee of the Executive Committee, composed of three (3) members, one of whom shall be the President of the Society as its Chairman, be appointed to work with the Chairman of the Council on Medical Service and Public Relations and the Public Policy and Legislation Committee, and the Secretary-Treasurer of the Society to coordinate these respective services to the best advantage of the members of the Society as a whole.—Referred to Committee on Committees and recommendation of this Committee that such a subcommittee be disapproved, was accepted.

Committee on Resolutions:—A copy of these resolutions be sent to each person and organization mentioned and also published in The Journal of the Louisiana State Medical Society.—Approved.

Committee on Rural and Urban Health:—1. The Committee on Rural and Urban Health be continued.—Approved. 2. Positive action be taken concerning requested allotment of $1,000,00 for ex-

pense of this Committee.—Referred to Committee on Budget and Finance and recommendation of this Committee that this amount be appropriated, was accepted.

Past Presidents' Advisory Council:—1. Message to Governor Kennon expressing appreciation of his cooperation in medical matters.—Approved. 2. Message to Dr. Rudolph Matas expressing regret at his inability to attend the 1955 session.—Approved. This Council also expressed approval of amendments to the Constitution and By-Laws as recommended by the special committee on Revision of the Charter, Constitution and By-Laws, and approval of recommendation of the president and the Committee on Public Relations Counsel that dues be increased to $50.00 per year.

RESOLUTIONS APPROVED

Accreditation of Hospitals

WHEREAS, The American Medical Association is the recognized official organization to represent medicine in the United States and,

WHEREAS, It is not only the privilege but the obligation of this organization to protect and safeguard medical care to the patients and to assist in every way possible, to maintain the high standards of medicine and surgery and,

WHEREAS, the AMA is the only organization which can and should speak officially for physicians regardless of which field of medicine they practice, and

WHEREAS, there is a marked growing unrest due to the fact that the AMA has not met its full obligations in regard to Accreditation of Hospitals for patient care and,

WHEREAS, there are two phases of Accreditation of Hospitals, one having to do with strictly housekeeping problems — the part which is unquestionably that of hospitals — and the other having to do with the care of the patient by the physician, staff organization and, of course, the intern and resident training program and,

WHEREAS, if this obligation is not met satisfactorily and soon, it will be increasingly difficult to discharge our responsibility, which is the patient, whereby we can render him the best medical service in the most economical fashion.

NOW THEREFORE, BE IT RESOLVED, that the American Medical Association assume its true responsibility and establish an Accreditation of Hospitals in regard to care of patient by physicians, staff organization and the intern and resident training program.

BE IT FURTHER RESOLVED, that if the American Hospital Association still has the desire to assist in the Accreditation of Hospitals that they be urged and invited to cooperate with the American Medical Association in continuing their accreditation in regard to the strictly physical problem which is unquestionably their responsibility.

BE IT FURTHER RESOLVED, that the House of Delegates of the Louisiana State Medical Society present this resolution to the House of Delegates of the American Medical Association.

Accreditation of Hospitals

RESOLVED that the House of Delegates of the Louisiana State Medical Society instruct the secretary of the State Society to send a copy of the resolution in re accreditation of hospitals, which was approved at the first session of this meeting, to secretaries of all state medical societies, asking them to have their societies support this resolution in the House of Delegates of the AMA when presented by the delegates of the Louisiana State Medical Society.

State Board of Health

WHEREAS the legally authorized guardian of the public health in Louisiana is the Louisiana State Board of Health; and

WHEREAS the Louisiana State Board of Health is the oldest State Board of Health in the United States; and

WHEREAS the Louisiana State Board of Health is now celebrating its 100th Anniversary; and

WHEREAS distinguished physicians of Louisiana spearheaded its organization and development and have served with distinction as members of the Louisiana State Board of Health; and

WHEREAS the Louisiana State Board of Health has been in very cordial relations with the Louisiana State Medical Society;

THEREFORE BE IT RESOLVED that the Louisiana State Medical Society in convention at its 75th Annual Meeting, go on record extending congratulations to and for the accomplishments of the Louisiana State Board of Health and that this resolution be spread in the minutes of the Louisiana State Medical Society in convention, spread on the pages of the Louisiana State Medical Society Journal and that a copy be sent to the Louisiana State Board of Health.

Dr. M. V. Hargrove

BE IT RESOLVED by the House of Delegates of the Louisiana State Medical Society that M. V. Hargrove, M. D., the only qualified physician in our state legislature, receive the commendations of this body, for his service to the citizens of Louisiana in protecting the public welfare, and his honest endeavor in behalf of all of its citizens.

Past Presidents

That the members of this House send greetings and good wishes to the past presidents of the Louisiana State Medical Society who are absent and express the regret of the House that they could not attend and the hope that they will be able to attend future meetings.

American Medical Association
in re Cult Practice of Medicine

BE IT RESOLVED by the House of Delegates of the Louisiana State Medical Society, that the AMA communicate with each state society under its jurisdiction, requesting that the societies encourage the medical schools in their respective states to offer systematic and regular instruction concerning the cult practice of medicine; and that the state society concerned offer its services to the medical schools in this behalf.

Hoover Commission

WHEREAS The Louisiana State Medical Society has always fostered the concept of better government at a better price for all Americans; and

WHEREAS the Louisiana State Medical Society has consistently endorsed policies established to insure efficient administration of the Federal Government and to provide maximum savings to the taxpayer; and

WHEREAS, the bipartisan First Hoover Commission, which was unanimously created by Congress in 1947, brought about a number of significant improvements in the administration of our Federal Government; and

WHEREAS a bipartisan New Hoover Commission was unanimously created by Congress in 1953 with the major purpose of continuing the search for new ways and means of saving money for the taxpayer; and

WHEREAS this New Hoover Commission is preparing reports for submission to the Congress with recommendations to provide more orderly and responsible government at less cost; now, therefore

BE IT RESOLVED by the Louisiana State Medical Society that we reaffirm our support of such actions in the public interest which are designed to bring about greater efficiency and dollar savings in government operations; and

BE IT RESOLVED that the Louisiana State Medical Society urges the President and the Congress to take appropriate steps to carry out the recommendations of the New Hoover Commission; and

BE IT FURTHER RESOLVED that the Louisiana State Medical Society alert the members of this organization to the need — on a patriotic, non-political basis — for public understanding, cooperation and action in support of the recommendations of the New Hoover Commission; and

BE IT FURTHER RESOLVED that the members and officials of the Louisiana State Medical Society individually and by cooperating with the Citizens Committee for the Hoover Report — endorse and work toward achieving the vital goal of better, more efficient and less expensive government for all the peoples of our Nation; and

BE IT FURTHER RESOLVED that copies of this resolution be sent to appropriate legislative representatives in Washington, D. C., and to the national headquarters of the Citizens Committee for the Hoover Report, 441 Lexington Avenue, New York 17.

RESOLUTION TABLED

Louisiana Hospital Service, Inc.

RESOLVED that the Louisiana State Medical Society grants its approval to Louisiana Hospital Service, Inc. as an agency to provide voluntary prepaid non-profit hospitalization, medical and surgical insurance.

AMENDMENTS ADOPTED

By-Laws

Chapter XI. (Assessments and How Payable) Section 1. (Submitted by Committee on Public Relations Counsel, approved by Committee on Budget and Finance and Past Presidents Advisory Council).

Assessments and How Payable — Each active member shall pay into the Society an *annual assessment of fifty dollars* ($50.00) which shall constitute his membership dues. Those specifically exempted in the Constitution shall not be liable for this assessment. Intern members shall pay the sum of one dollar ($1.00) per annum. Of the amount collected from active members, one dollar and fifty cents ($1.50) per capita shall be set aside as an annual entertainment fund. Any amount of this per capita appropriation not spent for an annual meeting and any surplus of other funds secured by Arrangements Committees and not expended for an annual meeting shall be placed in the general fund of the Society. In addition, one half dollar ($ .50) per capita shall be paid from dues collected from active members into the Medical Defense Fund, one dollar ($1.00) into the Indigent Physicians Fund, two dollars ($2.00) into the fund of the Committee on Public Policy and Legislation and *five dollars* ($5.00) *into a Domicile Fund.* After the first day of July and before the first day of October new active members shall pay one half of the annual dues for the fiscal year; after the first day of October of the current year, new active members admitted to the Society shall pay one quarter of the annual dues for the fiscal year.

Chapter 1. (*Membership*) *Section* 2. (Submitted by Committee on Revision of Charter, Constitution and By-Laws and approved by Past Presidents Advisory Council).

Rights — The name of a physician upon the properly certified roster of members of a component district or parish society, *who has been approved by the Executive Committee of the Louisiana State Medical Society,* shall be prima facie evidence of his right to register at the annual sessions of this Society provided his State

Society dues have been received for the current year.

Chapter IV. (House of Delegates) Section 6. (Submitted by Committee on Revision of Charter, Constitution and By-Laws and approved by Past Presidents Advisory Council). *Section to be deleted.*

Charters — It (House of Delegates) shall, upon application, provide and issue charters to district and parish societies organized to conform to the spirit of this Constitution and By-Laws.

Chapter IV. (House of Delegates) Section 7. (Submitted by Committee on Revision of Charter, Constitution and By-Laws and approved by Past Presidents Advisory Council).

Organization — In sparsely settled sections it (House of Delegates) shall have authority to organize the physicians of two or more parishes into societies to be designated by hyphenating the names of two or more parishes so as to distinguish them from district and other classes of societies, and these societies, when organized and (omit "chartered") *issued a charter by the Executive Committee of the Louisiana State Medical Society* shall be entitled to all the privileges and representation provided herein for parish societies until such parishes may be organized.

Chapter VIII.(Council) Section 1. (Submitted by Committee on Revision of Charter, Constitution and By-Laws and approved by Past Presidents Advisory Council).

Meetings — The Council shall hold meetings during the annual session of the Society (omit "at such")*and at other times* as necessity may require, subject to the call of the Chairman or on petition of three Councilors. It shall meet on the date of the first meeting of the Executive Committee after the annual meeting of the House of Delegates for reorganization and for the outlining of work for the ensuing year. At this meeting it shall elect a Chairman and Secretary and it shall keep a permanent record of its proceedings. It shall, through its Chairman, make an annual report to the House of Delegates at such time as may be provided.

Chapter XV. (Parish Societies) Section 5. (Submitted by Committee on Revision of Charter, Constitution and By-Laws and approved by Past Presidents Advisory Council).

Qualifications of Members — Each parish society shall judge of the qualifications of its own members, but, as such societies are the only portals to this Society, and to the American Medical Association, *no physician should be elected to membership who would not meet the qualifications and requirements prescribed for membership in the Louisiana State Medical Society, by its Constitution and By-Laws.* (omit — "every reputable and legally registered physician who is practicing, or who will agree to practice nonsectarian medicine, shall be eligible for membership"). Before a charter is issued to any parish society, full and ample notice and opportunity shall be given to every such physician in the parish to become a member.

Chapter XV. (Parish Societies) Section 13. (Submitted by Committee on Revision of Charter, Constitution and By-Laws and approved by Past Presidents Advisory Council).

Duties of Secretaries of Component Societies — The secretary of each parish society shall keep a roster of its members, and a list of the non-affiliated registered physicians of the parish, in which shall be shown the full name, address, college and date of license to practice in this state, and such other information as may be deemed necessary. He shall furnish an official report containing such information upon blanks supplied him for the purpose, to the Secretary of this Society. In keeping such roster the secretary shall note any changes in the personnel of the profession by death, or by removal to or from the parish *and status of all military members,* and in making his annual report he shall be certain to account for every physician who has lived in the parish during the year.

Constitution

Article IV. (Composition of the Society) Section 4. (Submitted by the Executive Committee at the 1954 meeting and approved by the House of Delegates; final vote of approval at 1955 meeting).

Inactive Members — Inactive membership shall include physicians who have been in active practice and members of long standing of the State Society who shall be approved for such membership by the Executive Committee. Also members who become permanently or temporarily incapacitated or of advanced age with limited practice, if such membership is requested and is approved by the Executive Committee. They shall not be entitled to medical defense nor shall they be eligible to hold office. No dues shall be required of inactive members.

Amendments Approved
Final Action to be taken at 1956 Meeting

Constitution

Article IV. (Composition of the Society) Section 1. (Submitted by the Committee on Revision of Charter, Constitution and By-Laws and approved by Past Presidents Advisory Council).

Active Members — The active members of this Society shall be the active members of the component district and parish medical societies, *who shall be approved by the Executive Committee of the Louisiana State Medical Society;* also physicians otherwise eligible to active membership in any district or parish not having a component society; provided, that after the organization in such district or parish of a component society they shall become members of said society or forfeit membership in the State Society.

Article IV. (Composition of the Society) Sec-

tion 2. (Submitted by Committee on Revision of Charter, Constitution and By-Laws and approved by Past Presidents Advisory Council).

Associate Members — Associate members of component societies *who shall be approved by the Executive Committee of the Louisiana State Medical Society,* will be eligible for associate membership; also physicians in the service of the Veterans' Bureau, Army, Navy or Public Health Service of the United States, who are on active duty and stationed in the state may be elected to associate membership when endorsed by two active members in good standing of the Society to whom they are personally known. Such membership is not to have the privileges of executive character or protection of medical defense. Dues for associate membership will be one-half amount of dues for active membership.

Article IV. (Composition of the Society) Section 5. (Submitted by Committee on Revision of Charter, Constitution and By-Laws and approved by Past Presidents Advisory Council).

Intern Members — Physicians serving internships or residencies in accredited hospitals shall during their period of internship or residency be eligible to membership in this Society through their respective component societies as intern members *upon approval of the Executive Committee of the Louisiana State Medical Society.* Thev shall not be entitled to medical defense, nor shall they be eligible to hold office or vote. Dues for intern members shall be $1.00 per year.

ELECTION OF OFFICERS, DELEGATE AND ALTERNATE TO AMA AND COMMITTEES

President-elect — Dr. Paul D. Abramson, Shreveport.

First Vice-President — Dr. George H. Hauser, New Orleans.

Second Vice-President — Dr. H. H. Hardy, Alexandria.

Third Vice-President — Dr. J. T. Brierre, New Orleans.

Chairman of House of Delegates — Dr. W. Robyn Hardy, New Orleans.

Vice-Chairman of House of Delegates — Dr. O. B. Owens, Alexandria.

Councilor, Third District — Dr. Guy R. Jones, Lockport.

Councilor, Fourth District — Dr. Ralph H. Riggs, Shreveport.

Councilor, Sixth District — Dr. Arthur D. Long, Baton Rouge.

Councilor, Seventh District — Dr. J. Y. Garber, Lake Charles.

Councilor, Eighth District — Dr. R. E. C. Miller, Alexandria.

Delegate to AMA (1956 and 1957) — Dr. J. Q. Graves, Monroe.

Alternate to Delegate to AMA (1956 and 1957) — Dr. A. A. Herold, Shreveport.

Committee on Committees — Dr. E. L. Leckert, New Orleans, Chairman; Dr. J. Kelly Stone, New Orleans; Dr. W. E. Barker, Jr., Plaquemine.

Committee on Journal — Dr. Sam Hobson, New Orleans; Dr. J. E. Knighton, Shreveport.

Committee on Medical Defense — Dr. J. Kelly Stone, New Orleans.

Committee on Public Policy and Legislation — Dr. E. L. Zander, New Orleans; Dr. J. E. Clayton, Norco; Dr. Leo Kerne, Thibodaux; Dr. C. E. Boyd, Shreveport; Dr. H. H. Cutler, Monroe; Dr. A. G. Robert, Baton Rouge; Dr. P. L. McCreary, Lake Charles; Dr. M. B. Pearce, Alexandria; Dr. Max M. Green, New Orleans (President-LSMS); Dr. C. Grenes Cole, New Orleans (Secretary-Treasurer LSMS).

Committee on Scientific Work — Dr. C. Grenes Cole, New Orleans (Secretary-Treasurer LSMS), Chairman; Dr. Sam Hobson, New Orleans; Dr. M. D. Hargrove, Shreveport.

FUTURE ANNUAL MEETINGS

Dates and places: — (1956—Alexandria; 1957—New Orleans; 1958—Shreveport; 1959—New Orleans); 1960—Invitation to Baton Rouge accepted; if hotel accommodations unavailable, meeting to be held on Gulf Coast.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Thursday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY ELECTS NEW OFFICERS FOR 1955 - 1956

The nineteenth annual meeting of The New Orleans Graduate Medical Assembly will be held February 27—March 1, 1956, headquarters at the Municipal Auditorium.

The following officers and members of the Executive Committee have been elected for this year:

Dr. Donovan C. Browne, President
Dr. Eugene H. Countiss, President-elect
Dr. Walter P. Gardiner, First Vice-President
Dr. Cuthbert J. Brown, Second Vice-President
Dr. P. L. Querens, Third Vice-President
Dr. Maurice E. St. Martin, Secretary
Dr. Jules Myron Davidson, Treasurer
Dr. Charles L. Brown, Director of Program
Dr. Ralph M. Hartwell, Assistant Director of Program
Dr. E. Perry Thomas, Assistant Director of Program

Executive Committee

Dr. Woodard D. Beacham (retiring President)
Dr. George C. Battalora
Dr. Sam Hobson
Dr. Barrett Kennedy
Dr. Ambrose H. Storck

L S U ANNOUNCES FELLOWSHIPS FOR TEACHERS OF TROPICAL MEDICINE

The Louisiana State University has received from the China Medical Board of New York a grant of $80,000 to support for two years a program of fellowships for teachers of tropical medicine and parasitology in U. S. medical schools to obtain practical experience in these subjects in the tropics. The program will be administered by Dr. William W. Frye, Dean of the School of Medicine, and Dr. Henry E. Meleney, Research Professor of Medicine. It has been inaugurated as a result of a recent survey of the instruction in these subjects in the medical schools, and of the qualifications of the faculty members conducting the instruction. This survey indicated that the amount of time allotted to Parasitology has decreased only slightly since World War II, but that Tropical Medicine as an entity in teaching has almost disappeared. The survey also revealed that over half of the teachers of Parasitology have had no experience in the tropics.

The. localities in which fellows will receive experience during the early part of the program are the San Juan de Dios Hospital, San José, Costa Rica, under the direction of Dr. Antonio Peña Chavarría, and the School of Medicine, University of Puerto Rico, San Juan, under the direction of Dean E. Harold Hinman. Fellows will have a brief period of orientation at the School of Medicine, Louisiana State University, before proceeding to the tropics. Seventy-seven teachers from 53 schools have expressed a desire to receive fellowships in the program. It is also expected that some of the experienced teachers in these fields will participate from time to time as consultants and instructors in the tropical centers.

Not more than five fellowships will be awarded for any one period in each tropical area. The first fellowship period will be July and August 1955. The fellows for this period are in process of selection. Tentatively four fellowship periods are planned for each year with one-month intervals between periods. Teachers who have expressed a desire for such a fellowship will be given an opportunity to apply for a period convenient for them. Other teachers in U. S. medical schools who are interested in this type of fellowship may secure further information from Dr. Meleney at the School of Medicine, Louisiana State University, New Orleans 12, Louisiana.

BOOKLET ON DRUG PRICES GETS ENTHUSIASTIC RESPONSE

Requests by the drug industry and physicians for a new consumer booklet called "I Hate To Buy Drugs, But . . . " have been so overwhelming that three printings, totaling 660,000 copies, have failed to keep up with demand, it is reported by Dr. Theodore G. Klumpp, president of the National Pharmaceutical Council and of Winthrop-Stearns Inc.

Terming the response "one of the most enthusiastic in my experience," Dr. Klumpp noted that the 660,000 copies were requested within one week after announcement of the booklet's availability. A fourth printing of 250,000 copies is now underway to fill requests pouring in daily to Newell W. Stewart, executive vice president of the Council, which is located at 610 Fifth Avenue, New York City.

REVISION OF FOREIGN QUARANTINE REGULATIONS

The first major revision of foreign quarantine regulations since 1946 has been completed by the Public Health Service. The revision, which became effective January 10, affects some 270 seaports, airports, and border entry points where the regulations are administered by medical officers and inspectors of the Division of Foreign Quarantine, Public Health Service. The regulations deal chiefly with six quarantinable diseases: smallpox, yellow fever, cholera, plague, typhus, and relapsing fever.

Changes in the regulations reflect recent advances in international reporting of disease outbreaks. They also reflect the improvement of health practices on such matters as food and water sources for ships and aircraft, and disposal of waste. Many of the changes are based on United States commitments under International Sanitary Regulations of the World Health Organization. The international regulations are intended to insure uniformity in quarantine measures and maximum protection against the international spread of disease, and to prevent unnecessary interference with world traffic.

AIR POLLUTION

There has been increasing evidence that polluted air constitutes a hazard to individual and community health and welfare in certain of the highly industrialized or large urban areas of the country. Specific occurrences of smoke, pollution, and fog—now known as "smog"—have been accompanied by excessive mortality and morbidity experiences during periods of their prevalence. Such episodes have happened both in this country and abroad. The more devastating of these took place in Glasgow in 1909 and 1925; the Meuse Valley, Belgium, in 1930; London in 1948 and 1952; Donora, Pennsylvania, in 1948; and Poza Rica, Mexico, in 1950.

The latest and most highly publicized occurrences of community air pollution are those which affected Los Angeles in recent years. It has also been shown that air pollution has adverse effects on plants and animals upon which this country depends for food, fiber, and other essential commodities. The consequences, if any, of long term exposure to subacute concentrations of air pollutants on man, animals, or plants have never been evaluated adequately.

ANTIBIOTIC FOR TUBERCULOSIS

Discovery of a new antibiotic which has produced "impressive" improvement in severe pulmonary tuberculosis cases and "good" results in stubborn infections of the genito-urinary tract has been disclosed in Atlanta, Georgia.

The occasion was the 14th Veterans Administration-Army-Navy Conference on the Chemotherapy of Tuberculosis, which was held in cooperation with the National Tuberculosis Association.

The new antibiotic, known by the trade-mark Seromycin and the generic name Cycloserine, was discovered in research laboratories of Commercial Solvents Corporation at Terre Haute, Indiana. Commercial Solvents arranged for the early clinical research and then set up a joint research project with Eli Lilly and Company.

If further clinical work firmly establishes the antibiotic's medical usefulness, Lilly will develop Seromycin's pharmaceutical forms and will market them.

AMERICAN SOCIETY OF MEDICAL TECHNOLOGISTS

The American Society of Medical Technologists will meet for the 23rd annual convention at the Jung Hotel, New Orleans, the week of June 12-17, 1955. Anticipated attendance is from 1200 to 1500 with official representation from each of the forty-eight states, Puerto Rico and Hawaii. This meeting will give technologists engaged in medical laboratories or in teaching students in approved schools of Medical Technology an opportunity to keep abreast of changes in procedures, new methods, latest developments in laboratory technic, and to exchange ideas and information.

Awards will be given for outstanding scientific papers submitted by members for the best individual scientific exhibit, best State exhibit, best State Publication and for photography.

WOMAN'S AUXILIARY TO THE LOUISIANA STATE MEDICAL SOCIETY

OFFICERS — 1955 - 1956

Consultant and Advisor	Mrs. Arthur Herold	Shreveport
Officers		
President	Mrs. Jules Myron Davidson	New Orleans
President-elect	Mrs. W. A. K. Seale	Sulphur
First Vice-President	Mrs. D. B. Barber	Pineville
Second Vice-President	Mrs. Wiley A. Dial	E. Baton Rouge
Third Vice-President	Mrs. C. Elmo Boyd	Shreveport
Fourth Vice-President	Mrs. Edward M. Harrell	Lafayette
Recording Secretary	Mrs. Dwight S. Danburg	Greenwell Springs
Treasurer	Mrs. Spencer B. McNair	New Orleans
Corresponding Secretary	Mrs. William J. Rein	New Orleans
Parliamentarian	Mrs. Aynaud F. Hebert	New Orleans
District Councilors		
First District	Mrs. Max Mayo Green	New Orleans
Second District	Mrs. Roy B. Harrison	New Orleans
Third District	Mrs. James B. Montgomery	Lafayette
Fourth District	Mrs. H. W. Boggs	Shreveport
Fifth District	Mrs. Eldredge L. Carroll	Columbia
Sixth District	Mrs. J. O. Hoth	E. Baton Rouge
Seventh District	Mrs. Walter Moss	Lake Charles
Eighth District	Mrs. John A. Worley	Alexandria

LOUISIANA'S THREE TOP WINNERS IN A.A.P.S. CONTEST TOP RECORD OF ANY STATE IN ANY NATIONAL ESSAY CONTEST THUS FAR

Dr. Mal Rumph, Essay Contest Chairman of the American Physicians and Surgeons essay contest, "The Advantages of Private Medical Care," furnishes us with both headline and "lead" for the story of the essay contest sponsored nationally by the A.A.P.S., in Louisiana by the Woman's Auxiliary to the Louisiana State Medical Society, and locally by the parish auxiliaries throughout the state.

It is often said that "the best part of every party is the ending", and seldom was this so true as when Mrs. Dwight Danburg, Louisiana State Essay Contest Chairman, telephoned past president Mrs. M. C. Wiginton the morning after the convention ended to tell her that Louisiana had placed all three of its entries in the six prize winning places of the contest. Margie Fastring, of New Orleans placed first, Rochelle Green, also of New Orleans was fourth, and Millie Robinson of Alexandria sixth.

After appropriate publicity was secured in New Orleans and Alexandria papers, through the efforts of Dr. Edwin L. Zander, godfather of the essay contest, the Association of Commerce of New Orleans chose to honor the young essayists by dedicating their Members' Council luncheon on Thursday, May 12, to presentation of the national prizes and honoring the winners, the medical profession, and the auxiliary workers.

At the head table were the three lovely essayists who thoroughly disprove the adage of beauty and brains not going together, Dr. Zander as a member of the Executive Board of the AAPS, and Dr. Max Green as president of the Louisiana State Medical Society. Three tables in the beautiful Blue Room of the Roosevelt Hotel were reserved for the parents of the three girls, judges of the contest, officials of local and state medical societies and auxiliaries and interested workers.

Those present included: parents, Mr. and Mrs. B. L. Fastring, Mr. and Mrs. Emmanuel Green of New Orleans, and Mrs. Robinson of Alexandria. Judges able to attend were: Colonel John E. Adkins, Jr., attorney, Mrs. Thomas Kelly of the Catholic Council of Cooperative Clubs, and Dr. C. C. Henson, Executive Director of the Edward G. Schlieder Fund.

In addition to Drs. Green and Zander, Dr. C. Grenes Cole, Secretary-Treasurer of the Louisiana State Medical Society, Dr. Edgar Hull, President of the Orleans Parish Medical Society, Dr. Bonnie Weilbacher, immediate past president of the Orleans Parish Medical Society, Dr. Hugh T. Beacham, Third Vice-President, and Mr. A. J. Kuhlmann, Executive Secretary of the Orleans Parish Medical Society, were present.

Mr. Edwin E. Eley represented the public school system of New Orleans, and Father Charles Hardy of St. Dominic's parish represented the parochial school department of superintendence.

Interested auxiliary members were, Mrs. Jules Myron Davidson, Mrs. Spencer B. McNair, Mrs. Robert Rougelot, Mrs. C. Grenes Cole, Mrs. George D. Feldner, Mrs. Dwight Danburg, Mrs. Mannie Mallowitz, Mrs. William Rein, Mrs. Felix Planche, and Mrs. Edwin R. Guidry.

Concerning the girls who brought honor to themselves, their city, state, and the medical auxiliaries and societies interested thereof, we

have to present the following facts as inspiration for the 1956 Contest.

Margie Fastring, who has won eleven hundred dollars for a fifteen hundred word essay is a shining example of the copy book maxim, "Try, try again." Margie entered the contest for three consecutive years before achieving her "first in city, state and nation." record. Eighteen year old Margie, a senior at Mt. Carmel Academy has been taught by the nuns of this order for the full twelve years of her schooling, and attributes her success to the efficiency with which she has been taught, and to the loyal encouragement of her parents, with her deep appreciation going to the groups which sponsor the essay contest. The prize winning money has literally "changed the face of the world" for Margie who will now register at Loyola University in the fall and supplement her nest egg with an out-of-school part time job.

Rochelle Green, who placed third in New Orleans, second in Louisiana, and fourth in the nation admits with the disarming candor of teen agers that her entrance in the medical essay contest was more or less compulsory. Everybody in Miss Fortunate Collins' Senior class in English at Fortier High School had as a term assignment entrance in one of three contests. Rochelle chose the "Advantages of Private Medical Care", and from being picked the best in her class, sailed on to win National honors. Rochelle is a member of the National Honor Society of Secondary School Students, and will attend the University of Texas come this fall.

Millie Robinson, who won first place in Rapides Parish, third in Louisiana, and sixth in the Nation, has an established interest in medicine and will enroll at Louisiana State University in the fall for her academic work, in preparation for a nursing career. Millie entered the AAPS contest two years ago and placed third in the parish. Her interest in the topic grew steadily, and she was successful this year in placing in all three contests. Millie, who is the daughter of Mr. and Mrs. John M. Robinson of Alexandria, is a member of the National Honor Society and an honor roll student at Bolton High School. She attributes her success to the guidance and leadership of her English teachers at Bolton, and to her parents for their patience and encouragement.

BOOK REVIEWS

This Pace is not Killing Us; by J. I. Rodale, Emmaus, Pa., Rodale Books, Inc., 1954, Pp. 64, Price $1.00.

The author of this 64 page essay believes fervently and completely that it is not the pace of our lives but its laxity and ease that is killing us off by heart disease. He has quite selectively quoted medical and other authorities to prove that heart disease derives from destructive inactivity and wrong diet. This book makes interesting reading though it is of doubtful value to the practitioner.

IRVIN A. KRAFT, M. D.

Surgical Treatment of Cancer of the Cervix; by Joe Meigs, M. D. (Ed.), New York, Grune and Stratton, 1954, Pp. 462, Price $12.00.

This is an excellent book on the gross pathology and treatment of cancer of the cervix and contains excellent anatomical drawings. The plates of the circulatory and lymphatic systems are extremely clear. The discussions and diagrams of the common surgical procedures from simple total hysterectomy to pelvic exenteration are well-presented. This book should be in the library of anyone interested in the surgery of cancer of the cervix.

CHARLES C. ABBOTT, M. D.

PUBLICATIONS RECEIVED

Grune & Stratton, N. Y.: Cerebral Vascular Diseases, by Irving S. Wright, M. D. and E. Hugh Luckey, M. D.; Cardiac Auscultation, by J. Scott Butterworth, M. D., Maurice R. Chassin, M. D., and Robert McGrath, M. D.

Little, Brown & Co., Boston: The Care of Your Skin, by Herbert Lawrence, M. D.

W. B. Saunders Co., Phila.: Surgery of the Alimentary Tract, by Richard T. Shackelford, M. D., assisted by Hammond J. Dugan, M. D. (Volumes 1, 2 and 3).

Springer Publishing Co., Inc., N. Y.: Should the Patient Know the Truth?, edited by Samuel Standard, M. D., and Helmuth Nathan, M. D.

Charles C Thomas, Publisher, Springfield, Ill.: Pain: Its Mechanisms and Neurosurgical Control, by James C. White, M. D., and William H. Sweet, M. D.; Practical Medical Mycology, by Edmund L. Keeney, M. D., edited by Roscoe L. Pullen, M. D.; Angiographic Localization of Intracranial Masses, by Arthur Ecker, M. D., and Paul A. Riemenschneider, M. D.; Kinesiology of the Human Body Under Normal and Pathological Conditions, by Arthur Steindler, M. D.; The Therapy of Skin Tuberculosis, by Gustav Riehl, M. D., and Oswald Kopf, M. D.